Service Manual

ViewSonic VX510-1

Model No. VS10090

15” Color TFT LCD Display

(VX510_SM_833 Rev. 1a May 2004)

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Revision History

Revision	Date	Description Of Changes	Approval
1a	05/27/04	Initial Release DCN-4473	Angela Lu

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1. Precautions and Safety Notices

1. Appropriate Operation

(1) Turn off the product before cleaning.
(2) Use only a dry soft cloth when cleaning the LCD panel surface.
(3) Use a soft cloth soaked with mild detergent to clean the display housing.
(4) Use only high quality and safety approved AC/DC power cord.
(5) Disconnect the power plug from AC outlet if the product is not used for a long period of time.
(6) If smoke, abnormal noise, or strange odor is present, immediately switch the LCD display off.
(7) Do not touch the LCD panel surface with sharp or hard objects.
(8) Do not place heavy objects on the LCD display, video cable, or power cord.
(9) Do not use abrasive cleaners, waxes or solvents for your cleaning.
(10) Do not operate the product under the following conditions:
- Extremely hot, cold or humid environment.
- Areas susceptible to excessive dust and dirt.
- Near any appliance generating a strong magnetic field.
- Place in direct sunlight.

2. Caution

No modification of any circuit should be attempted. Service work should only be performed after you are thoroughly familiar with all of the following safety checks and servicing guidelines.

3. Safety Check

Care should be taken while servicing this LCD display. Because of the high voltage used in the inverter circuit, the voltage is exposed in such areas as the associated transformer circuits.

4. LCD Module Handling Precautions

4.1 Handling Precautions

(1) Since front polarizer is easily damaged, pay attention not to scratch it.
(2) Be sure to turn off power supply when inserting or disconnecting from input connector.
(3) Wipe off water drop immediately. Long contact with water may cause discoloration or spots.
(4) When the panel surface is soiled, wipe it with absorbent cotton or other soft cloth.
(5) Since the panel is made of glass, it may break or crack if dropped or bumped on hard surface.
(6) Since CMOS LSI is used in this module, take care of static electricity and insure human earth when handling.
(7) Do not open nor modify the Module Assembly.
(8) Do not press the reflector sheet at the back of the module to any directions.
(9) In case if a Module has to be put back into the packing container slot after once it was taken out from the container, do not press the center of the CCFL Reflector edge. Instead, press at the far ends of the CFL Reflector edge softly. Otherwise the TFT Module may be damaged.
(10) At the insertion or removal of the Signal Interface Connector, be sure not to rotate nor tilt the Interface Connector of the TFT Module.
(11) After installation of the TFT Module into an enclosure (LCD monitor housing, for example), do not twist nor bend the TFT Module even momentary. At designing the enclosure, it should be taken into consideration that no bending/twisting forces are applied to the TFT Module from outside. Otherwise the TFT Module may be damaged.

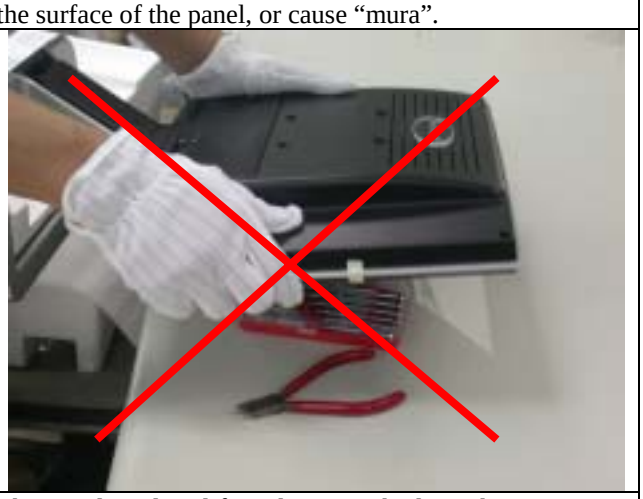
(12) Cold cathode fluorescent lamp in LCD contains a small amount of mercury. Please follow local ordinances or regulations for disposal.

(13) Small amount of materials having no flammability grade is used in the LCD module. The LCD module should be supplied by power complied with requirements of Limited Power Source (IEC60950 or UL1950), or be applied exemption.

(14) The LCD module is designed so that the CFL in it is supplied by Limited Current Circuit (IEC60950 or UL1950). Do not connect the CFL in Hazardous Voltage Circuit.

4-2 Handling and Placing Methods

Correct Methods	Incorrect Methods
Only touch the metal frame of the LCD panel or the front cover of the monitor. Do not touch the surface of the polarizer.	Surface of the LCD panel is pressed by fingers. That may cause “mura”.
Take out the monitor with cushions.	Take out the monitor by grasping the LCD panel. That may cause “mura”.

Place the monitor on a clean and soft foam pad.	Placing the monitor on foreign objects. That may scratch the surface of the panel, or cause “mura”.
	
	The panel is placed face-down on the lap. That may cause “mura”.

2. Specification

GENERAL REQUIREMENTS

2-1. GENERAL SPECIFICATION

Test Resolution & Frequency	**1024x768** @ 60Hz
Test Image Size	Full Size
Contrast and Brightness Controls	Factory Default: Contrast = 70%, Brightness = 100%

2-2. VIDEO INTERFACE

Analog Input Connector	DB-15 (Analog),
Digital Input Connector	DVI-D (Digital) :N/A
Default Input Connector	Defaults to the first detected input
Video Cable Connector DB-15 Pin out	Compliant DDC 1/2B
Video Signals	1.Video RGB (Analog) Separate, Composite, and Sync on Green
Video Impedance	75 Ohms (Analog)
Exclusions	Not compatible with interlaced video

2-3. POWER SUPPLY

Internal Power Supply	Part Number: DIAPAR002D22
Input Voltage Range	90 to 264 VAC
Input Frequency Range	47.5 to 63 Hertz
Short Circuit Protection	Output can be shorted without damage
Over Current Protection	8 A typical at 5 VDC
Leakage Current	0.7mA (Max) at 254VAC / 60Hz
Efficiency	75% typical at 115VAC Full Load
Fuse	Internal and not user replaceable
Power Dissipation	18.5Watts (typ),30Watts(Max.)

2-4. ELECTRICAL REQUIREMENT

Horizontal / Vertical Frequency

Horizontal Frequency	**30 – 60** KHz
Vertical Refresh Rate	**50 – 75**Hz.
Maximum Pixel Clock	**80** MHz
Primary Preset	1024x768 @ 60Hz

Timing Table

Timing -- Analog --	
Item	Resolution
1	640 x 350 @ 70Hz, 31.5kHz
2	640 x 400 @ 70Hz, 31.5kHz
3	640 x 480 @ 60Hz, 31.5kHz

4	640 x 480 @ 67Hz, 35.0kHz
5	640 x 480 @ 72Hz, 37.9kHz
6	640 x 480 @ 75Hz, 37.5kHz
7	640 x 480 @ 85Hz, 43.27kHz
8	720 x 400 @ 70Hz, 31.5kHz
9	800 x 600 @ 56Hz, 35.1kHz
10	800 x 600 @ 60Hz, 37.9kHz
11	800 x 600 @ 75Hz, 46.9kHz
12	800 x 600 @ 72Hz, 48.1kHz
13	800 x 600 @ 85Hz, 53.7kHz
14	832 x 624 @ 75Hz, 49.7kHz
15	1024 x 768 @ 60Hz, 48.4kHz
16	1024 x 768 @ 70Hz, 56.5kHz
17	1024 x 768 @ 72Hz, 58.1kHz
18	1024 x 768 @ 75Hz, 60.0kHz
19	1024 x 768 @ 85Hz, 68.67kHz

Remark: Fv: 76Hz ~ 85Hz can be supported, not guarantee.

Changing Modes

Maximum Mode Change Blank Time for image stability Note: 1. Excluding Auto Adjust" time 2. Under DOS mode (640 x 350, 720 x 400 & 640 x 400), there is no "Auto Adjust" feature. 3. The monitor needs to do "Auto Adjust" the first time a new mode is detected	Under 5 seconds (Max), 1 seconds (Typ.),for recognized timings 1-2 seconds(Typ.),for under-recognized timings

2-5. LCD Panel

Panel Characteristics

Panel Type	HANNSTAR HSD150SX84-G
Type	Color TFT Active Matrix XGA LCD
Active Size	304.1 (H) x 228.1 (V)
Pixel Arrangement	RGB Vertical Stripe
Pixel Pitch	0.297 mm(H) x 0.297mm (V)
Glass Treatment	Anti Glare (Hard coating 3H)
# of Backlights	2 CCFL edge-light (1 top / 1 bottom)
Backlight Life	40,000Hours (Typ) / 30,000 Hours (Min)
Luminance Condition: CT = 6500K, Contrast = Max, Brightness = Max	250 cd/m2 (Typ after 30 minute warm up) 200 cd/m2 (Min after 30 minute warm up)
Brightness Uniformity	△L5=Max 1.3 △L5 = Maximum Luminance / Minimum Luminance

Contrast Ratio	450:1 (Typ), 300:1 (Min)
Color Depth	262, 144 colors (6 bit panel)
Viewing Angle (Horizontal)	120 deg @ CR>10, 150 deg @ CR>5
Viewing Angle (Vertical)	100 deg @ CR>10, 115 deg @ CR>5
Response Time 10%-90% @ Ta=25°C	25 ms (Tr +Tf) (Typ) 35 ms (Tr +Tf) (Max)

2-6. MECHANICAL

Dimension (Desktop)

Width	353.69 mm
Height	387.69 mm
Depth	169.51 mm
Depth (Head only)	59.5mm
Monitor Weight	3.4 kg / 7.5 lbs

Ergonomics

20 DEGREES MINIMUM	Tilt Up
5 degrees	Tilt Down

Package Specifications

Width	417 mm
Height	480 mm
Depth	223 mm
Cross Weight	5.1 kg / 11.2 lbs

2-7. ENVIRONMENTAL

Environmental

Operating Temperature	0°C to +40°C
Storage Temperature	-20°C to +60°C
Operating Relative Humidity	10% to 80% RH Non-Condensing
Storage Relative Humidity	10% to 90% RH Non-Condensing
Operating Altitude	0 to +3,000 meters
Storage Altitude	0 to +12,000 meters

2-8 Analog EDID

Time: 08:46:29

Date: Fri Nov 14, 2003

VIEWSONIC CORPORATION

EDID Version # 1, Revision # 3

DDCTest For: ViewSonic VX510

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128 BYTES OF EDID CODE:

	0	1	2	3	4	5	6	7	8	9
0	00	FF	FF	FF	FF	FF	FF	00	5A	63
10	19	64	01	01	01	01	01	0D	01	03
20	0E	1E	17	78	2A	71	D6	A2	56	49
30	96	24	13	4F	54	BF	EE	00	01	01
40	01	01	01	01	01	01	01	01	01	01
50	01	01	01	01	64	19	00	40	41	00
60	26	30	18	88	36	00	30	E4	10	00
70	00	18	00	00	00	FF	00	50	33	30
80	30	33	30	31	30	30	30	30	31	0A
90	00	00	00	FD	00	32	50	1E	3C	08
100	00	0A	20	20	20	20	20	20	00	00
110	00	FC	00	56	58	35	31	30	0A	20
120	20	20	20	20	20	20	00	70		

(08-09) ID Manufacturer Name = VSC

(11-10) Product ID Code = 6419

(12-15) Last 5 Digits of Serial Number = Not Used

(16) Week of Manufacture = 01

(17) Year of Manufacture = 2003

(10-17) Complete Serial Number = See Descriptor Block

(18) EDID Version Number = 1

(19) EDID Revision Number = 3

(20) VIDEO INPUT DEFINITION:

Analog Signal

0.700, 0.300 (1.000 Vp-p)

Separate Syncs, Composite Sync, Sync on Green

(21) Maximum Horizontal Image Size = 300 mm

(22) Maximum Vertical Image Size = 230 mm

(23) Display Gamma = 2.20

(24) Power Management and Supported Feature(s):

Active Off/Very Low Power, Preferred Timing Mode

Display Type = R/G/B Color

(25-34) CHROMA INFO:

Red X - 0.634 Green X - 0.285 Blue X - 0.144 White X - 0.310

Red Y - 0.339 Green Y - 0.587 Blue Y - 0.075 White Y - 0.330

(35) ESTABLISHED TIMING I:

720 X 400 @ 70Hz (IBM,VGA)

640 X 480 @ 60Hz (IBM,VGA)

640 X 480 @ 67Hz (Apple,Mac II)

640 X 480 @ 72Hz (VESA)

640 X 480 @ 75Hz (VESA)

800 X 600 @ 56Hz (VESA)

800 X 600 @ 60Hz (VESA)

(36) ESTABLISHED TIMING II:

800 X 600 @ 72Hz (VESA)

800 X 600 @ 75Hz (VESA)

832 X 624 @ 75Hz (Apple,Mac II)

1024 X 768 @ 60Hz (VESA)

1024 X 768 @ 70Hz (VESA)

1024 X 768 @ 75Hz (VESA)

(37) Manufacturer's Reserved Timing:

None Specified

(38-53) Standard Timing Identification:

Not Used

Not Used

Not Used

Not Used

Not Used

Not Used

Not Used

Not Used

(54-71) Detailed Timing / Descriptor Block 1:

1024x768 Pixel Clock: 65.00 MHz

Horizontal Image Size: 304 mm Vertical Image Size: 228 mm

Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:

Active Time: 1024 pixels Blanking Time: 320 pixels

Sync Offset: 24 pixels Sync Pulse Width: 136 pixels

Border: 0 pixels Frequency: 48.36 KHz

Vertical:

Active Time: 768 lines Blanking Time: 38 lines

Sync Offset: 3 lines Sync Pulse Width: 6 lines

Border: 0 lines Frequency: 60.00 Hz

Digital Separate, Horizontal Polarity (-) Vertical Polarity (-)

(72-89) Detailed Timing / Descriptor Block 2:

Monitor Serial Number:

P30030100001

(90-107) Detailed Timing / Descriptor Block 3:

Monitor Range Limits:

Min Vertical Freq - 50 Hz

Max Vertical Freq - 80 Hz

Min Horiz. Freq - 30 KHz

Max Horiz. Freq - 60 KHz

Pixel Clock - 80 MHz

Secondary GTF - Not Supported

(108-125) Detailed Timing / Descriptor Block 4:

Monitor Name: VX510

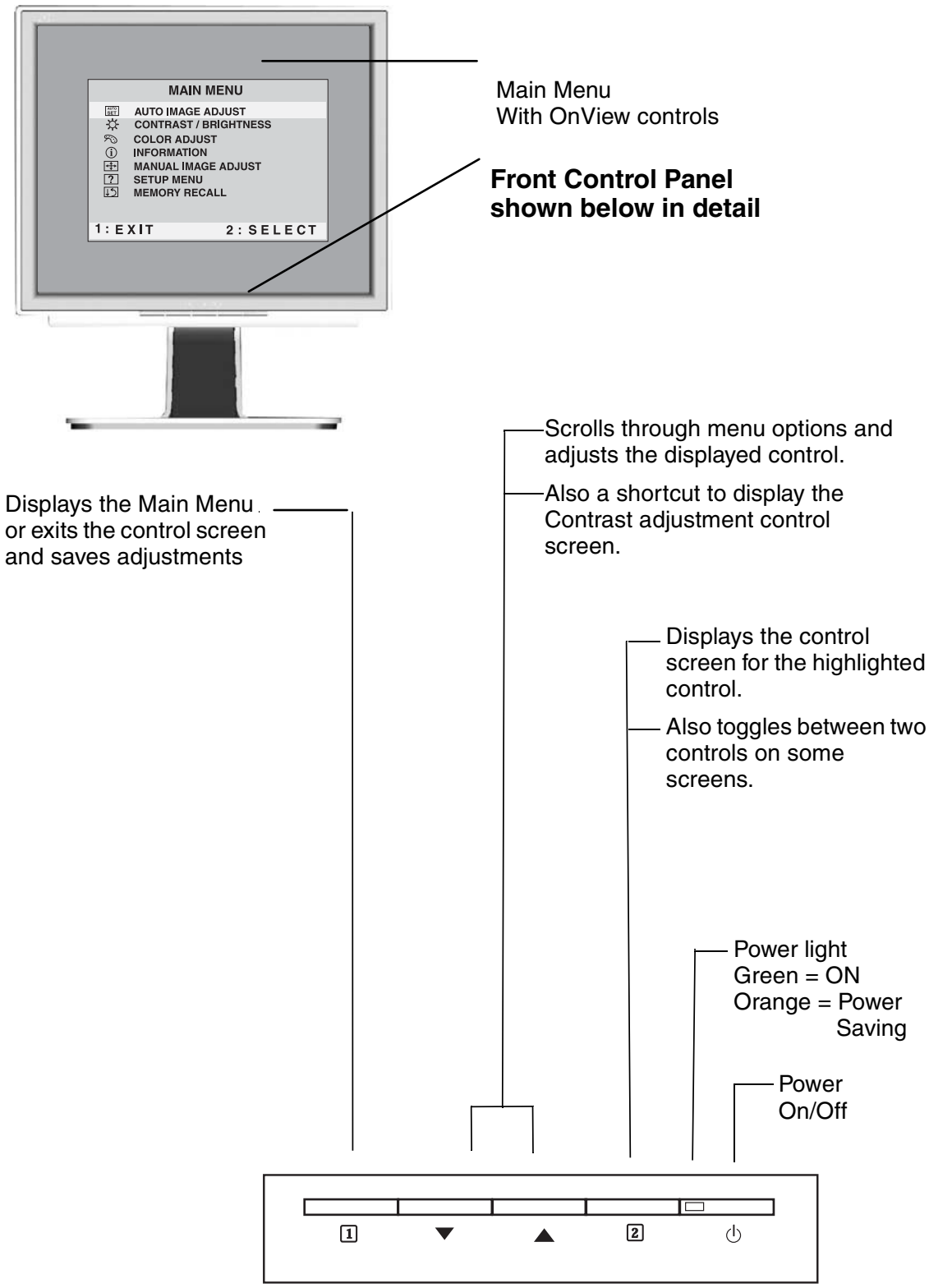
(126) No Extension EDID Block(s)

(127) CheckSum OK

3. Front Panel Function Control Description

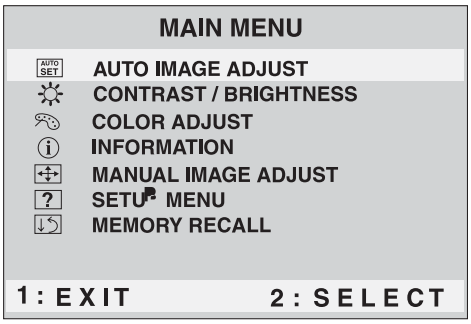
Adjusting the Screen Image

Use the buttons on the front control panel to display and adjust the OnView® controls which display on the screen. The OnView controls are explained at the top of the next page and are defined in “Main Menu Controls” on page 9.



Do the following to adjust the screen image:

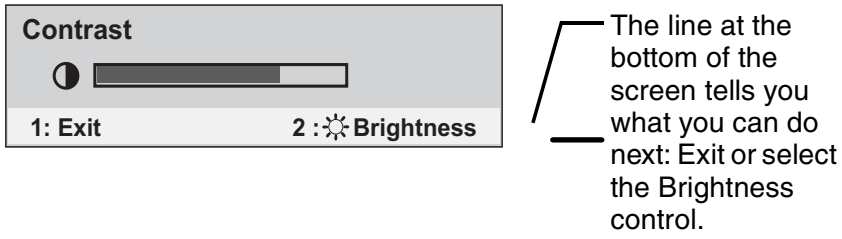
1 To display the Main Menu, press button [1].



NOTE: All OnView menus and adjustment screens disappear automatically after about 30 seconds.

2 To select a control you want to adjust, press ▲ or ▼ to scroll up or down the Main Menu.

3 After the control is selected, press button [2]. A control screen like the one shown below appears.


Contrast
1: Exit
2 : Brightness
The line at the bottom of the screen tells you what you can do next: Exit or select the Brightness control.

4 To adjust the control, press the up ▲ or down ▼ buttons.

5 To save the adjustments and exit the menu, press button [1] *twice*.

The following tips may help you optimize your display:

- Adjust your computer's graphic card so that it outputs a video signal 1024 x 768 @ 60 Hz to the LCD display. (Look for instructions on “changing the refresh rate” in your graphic card's user guide.)
- If necessary, make small adjustments using H POSITION and V POSITION until the screen image is completely visible. (The black border around the edge of the screen should barely touch the illuminated “active area” of the LCD display.)

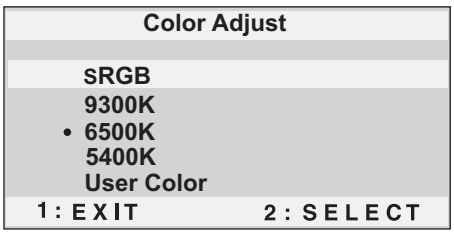
Main Menu Controls

Adjust the menu items shown below by using the up ▲ and down ▼ buttons.

Control	Explanation
AUTO SET	**Auto Image Adjust** automatically sizes, centers, and fine tunes the video signal to eliminate waviness and distortion. Press the [2] button to obtain a sharper image. **NOTE:** 1. Auto Image Adjust works with most common video cards. If this function does not work on your LCD display, then lower the video refresh rate to 60 Hz and set the resolution to its pre-set value. 2. The Auto Image Adjust and most Manual Image Adjust functions are not available for DVI input.
	Contrast adjusts the difference between the image background (black level) and the foreground (white level).
	Brightness adjusts background black level of the screen image.

Control	Explanation

Color Adjust provides several color adjustment modes: preset color temperatures and **RGB** which allows you to adjust red (**R**), green (**G**), and blue (**B**) separately. The factory setting for this product is 6500K (6500 Kelvin).



sRGB — sRGB is quickly becoming the industry standard for color management, with support being included in many of the latest applications. Enabling this setting allows the LCD display to more accurately display colors the way they were originally intended. Enabling the sRGB setting will cause the Contrast and Brightness adjustments to be disabled.

9300K — Adds blue to the screen image for cooler white (used in most office settings with fluorescent lighting).

6500K — Adds red to the screen image for warmer white and richer red.

5400K — Adds green to the screen image for a darker color.

User Color — Individual adjustments for red (R), green (G), and blue (B).

1 To select color (R, G or B) press button [2].

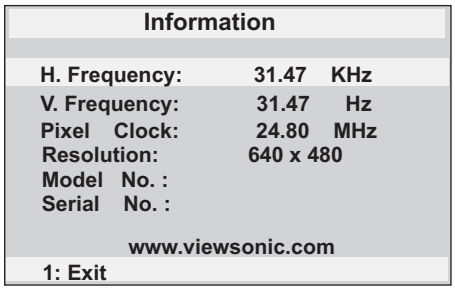
2 To adjust selected color, press ▲ or ▼.

Important: If you select RECALL from the Main Menu when the product is set to a Preset Timing Mode, colors return to the 6500K factory preset.

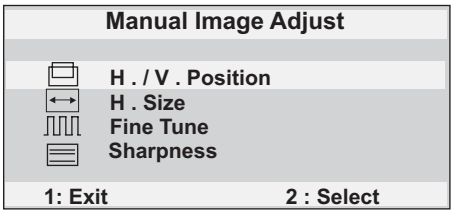
Control	Explanation

Information displays the timing mode (video signal input) coming from the graphics card in your computer. See your graphic card's user guide for instructions on changing the resolution and refresh rate (vertical frequency).

NOTE: VESA 1024 x 768 @ 60 Hz (recommended) means that the resolution is 1024 x 768 and the refresh rate is 60 Hertz.



Manual Image Adjust displays the Manual Image Adjust menu.



The **Manual Image Adjust** controls are explained below:

Horizontal Position moves the screen image left or right.

Vertical Position moves the screen image up or down.

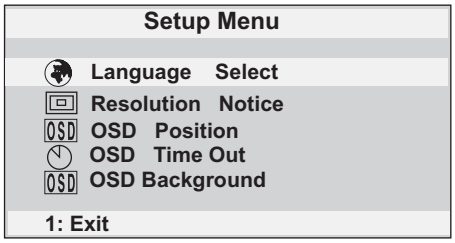
Horizontal Size adjusts the width of the screen image.

Fine Tune sharpens focus by aligning the illuminated text and/or graphic characters.

Sharpness adjusts the clarity and focus of the screen image.

Control	Explanation

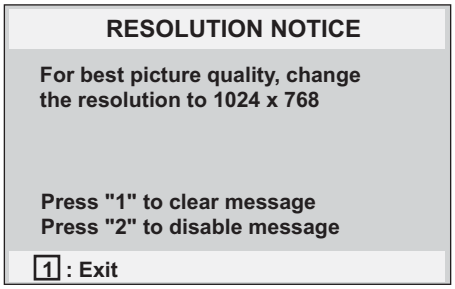
Setup Menu displays the menu shown below.



The **Setup Menu** controls are explained below:

Language allows you to choose the language used in the menus and control screens.

Resolution Notice displays the Resolution Notice menu shown below.


RESOLUTION NOTICE
For best picture quality, change the resolution to 1024 x 768
Press "1" to clear message
Press "2" to disable message
1 : Exit

Resolution Notice advises the optimal resolution to use.

OSD Position allows you to move the on-screen display menus and control screens.

OSD Timeout sets the length of time an on-screen display screen is displayed. For example, with a “15 second” setting, if a control is not pushed within 15 seconds, the display screen disappears.

OSD Background allows you to turn the On-Screen-Display background on or off.

Memory Recall returns adjustments to the original factory settings if the display is operating in a factory Preset Timing Mode listed in this user guide.

Exception: This control does not affect changes made with the User Color control, Language and Power Lock setting.

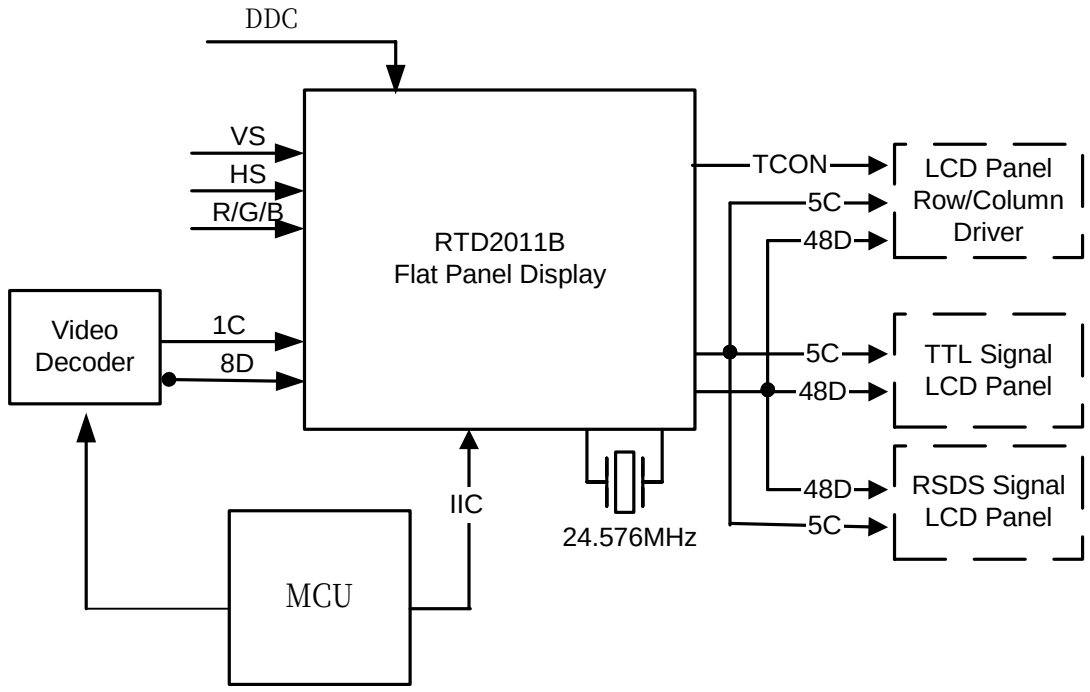
4. Circuit Description

MCU

The Winbond W78E65 is an 8-bit microcontroller which has in-system programmable FLASH EPROM for firmware updating. The instruction set of the W78E65 is fully compatible with the standard 8052. The W78E65 contains a 64K bytes of main FLASH EPROM to be updated by the loader program located at the 4KB auxiliary FLASH EPROM; four 8-bit ib-directional and bit-addressable I/O ports; three 16-bit timer/counters; a serial port. The W78E65 allows user to modify firmware by using ISP function. Once the code is confirmed, the user can protect the code for security.

RTD2011B

The RTD2011B is a graphic processing IC for Liquid Crystal Display (LCD) monitors, It support up to 110MHz (XGA@85Hz). On-chip functions include a 8-bit triple-channel 110MHz ADC, PLL, 8-bit, a high quality zoom scaling engine, Sharpness/Smooth filter enhancement, digital color processor, embedded on-screen display (OSD) controller support multi-language. In output interface, it can support TTL, Reduced Swing Differential Signaling (RSDS) data bus type 1~3.and programmable TCON function.



5. Adjusting Procedure

1. Function Test

1.1 Product

- 15” LCD monitor

1.2 Test Equipment

-Color Video Signal & Pattern (or PC with XGA resolution)

1.3 Test Condition

Before function test and alignment, each LCD monitor should be warmed up for at least 30 minutes with the following conditions:

(a) In room temperature,

(b) With full-white screen, RGB, and Black

(c) With cycled display modes,

640*480 (H=43.27kHz, V=85Hz)

800*600 (H=53.7kHz, V=85Hz)

1024*768 (H=68.67, V=85Hz)

1.4 Test Display Modes & Pattern

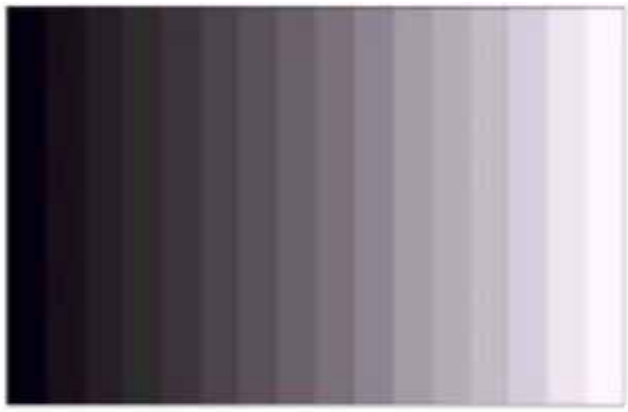
1.4.1 Compatible Modes

1. 640 x 350@ 70Hz, 31.5kHz
2. 640 x 400@ 70Hz, 31.5kHz
3. 640 x 480@ 60Hz, 31.5kHz
4. 640 x 480@ 67Hz, 35.0kHz
5. 640 x 480@ 72Hz, 37.9kHz
6. 640 x 480@ 75Hz, 37.5kHz
7. 640 x 480@ 85Hz, 43.27kHz
8. 720 x 400@ 70Hz, 31.5kHz
. 800 x 600@ 56Hz, 35.1kHz
10. 800 x 600@ 60Hz, 37.9kHz
11. 800 x 600@ 75Hz, 46.9kHz
12. 800 x 600@ 72Hz, 48.1kHz
13. 800 x 600@ 85Hz, 53.7 kHz
14. 832 x 624@ 75Hz, 49.7kHz
15. 1024 x 768@ 60Hz, 48.4kHz
16. 1024 x 768@ 70Hz, 56.5kHz
17. 1024 x 768@ 72Hz, 58.1kHz
18. 1024 x 768@ 75Hz, 60.0kHz
1 . 1024 x 768@ 85Hz, 68.67kHz

1.4.2 Function Test Display Pattern

Item	Test Content	Pattern	Specification	Remark
1	Frequency & Tracking	Fine Line Moire	Eliminate visual wavy noise.	Figure1
2	Contrast/Brightness	16Gray Scale	16 gray levels should be distinguishable.	Figure2
3	Boundary	Horizontal & Vertical Thickness	Horizontal and Vertical position Of video should be adjustable to Be within the screen frame.	Figure3
4	RGB Color Performance	RGB Color Intensities	Contrast of each R,G,B,color Should be normal.	Figure4,5,6
5	Screen Uniformity & Flicker	Full White	Should be compliant with the spec.	Figure7
6	Dead Pixel/Line	White Screen & Dark Screen	The numbers of dead pixels should Be compliant with the spec.	Figure7,8
7	White Balance	White & Black Pattern	The screen must have the pure white And black pattern, no other color.	Figure9

Fine Line Morie Pattern (Figure1)



Gray Scale Pattern (Figure2)

Horizontal & Vertical Thickness Pattern (Figure 3)

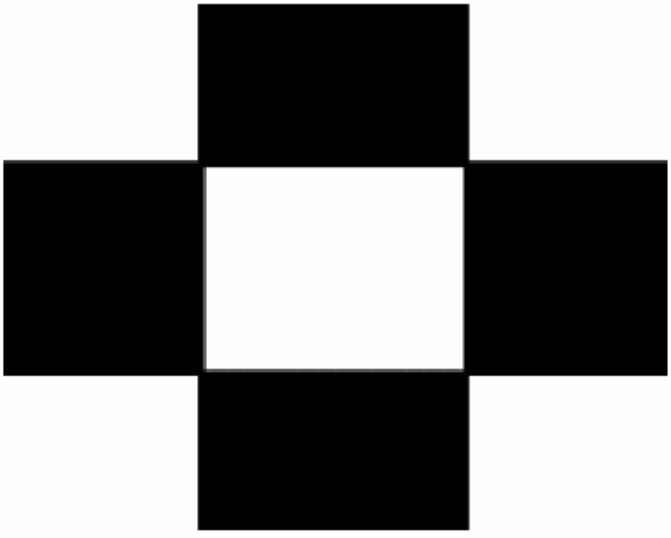
R. Color Pattern (Figure 4)

G. Color Pattern (Figure5)

B. Color Pattern (Figure 6)

Full White Pattern (Figure 7)

Dark Screen Pattern (Figure 8)



Black-White Pattern (Figure 9)

1.5 Function Test and Alignment Procedure

1.5.1 All Modes Reset

You should do “Memory Recall’’on Main Menu first.This action will allow you to erase all end-user’s settings and restore the factory defaults.

1.5.2 Auto lmage Adjust

Please select and enter***“Auto Image Adjust”***function on Main menu to see if it workable. The***“Auto Image Adjust”***function is aimed to offer a better screen quality by built-In ASIC . For optimum screen quality, the user has to adjust each function manually.

1.5.3 Firmware

Test Pattern:Burn In Mode

-Mark sure the F/W is the latest version.

1.5.4 DDC

Test Pattern:EDID program

-Make sure it can pass test program.

1.5.5 Fine Tune and Sharpness

Test Signal:1024*768@60Hz

Test Pattern:Line Moire Pattern

-Check and see if the image has noise and focus performs well.Eliminate visual line bar.

-If not,readjust by the following steps:

(a) Select and enter**“Fine Tune”**function on**“Manual Image Adjuet”**to adjust the image to adjust the image to eliminate visual wavy noise.

(b) Then, selsct and enter**“Sharpness”**fnuction to adjust the clarity and focus.

1.5.6 Boundary

Test Signal:1024*768@60Hz

Test Pattren:Horizontal & Vertical Line Thickness Pattern

-Check and see if the image boundary is within screen frame.

-If not, readjust by the following steps:

(a) Select and enter **“Manual Image Adjuet”** function on OSD Main Meun.

(b) Then, select and enter**“Horizontal Size”**or**“Horizontal/Vertical Position”** function to adjust the video boundty to be full scanned and within screen frame.

1.5.7 White Balance

Test Signal:640*480@60Hz

Test Pattern:White and Black Pattern

1.5.8 RGBColors Contrast

Test Signal:1024*768@60Hz

Test Pattern:R,G,B,Color Intensities Pattern and 16 Gray Scale Pattern

-Check and see if each color is normal and distinguishable.

-If not,please return the unit to repair area.

1.5.9 Screen Uniformity and Flicker

Test Signal:1024*768@60Hz

Test pattern:Full White Pattern

-Check and see if it is in normal condition.

1.5.10 Dead Pixel and Linegnal

Test Signal:1024*768@60Hz

Test Pattern: Dark and White Screen Pattern

-Check and see if there are dead pixels on LCD panel with shadow gauge and filter film.

-The total numbers and distance of dead pixels should be compliant with the spec.

1.5.11 Mura

Test Pattern:White,GRB,Black,&Gary

Test Tool:5%ND Filter.

1.5.12 Check for Secondary Display Modes

Test Signal:

Analog:640*350@70Hz;640*480@60/67/72/75/85Hz

720*400@70Hz;800*600@56/60/72/75/85Hz

832*624@75Hz,1024*768@60/70/72/75/85Hz

-Normally when the primary mode1024*768@60Hz is well adjusted and compliant with the specification,the secondary modes will also be compliant with the spec.But we still have to check with the general test pattern to make sure every secondary is compliant with the specification.

1.5.13 All Modes Reset

After final QC step,we have to erase all saved changes again and restore the factory defaults.You should do“All mode Reset”again.

1.5.14 Power Off Monitor

Turn off the monitor by pressing“Power”button.

2 Adjusting Procedure - Firmware Upgrade Procedure

When you receive the returned monitor, please check whether the firmware version is the latest. If not, please do the following procedures to upgrade it to the latest version.

2-1 Equipment Needed

-VX510 Monitor
-Fixture for Firmware upgrade
-Power adapter *1 for Fixture
-VGA Cable *2
-PC (Personal Computer)
-Com port Cable *1
-Firmware Upgrade program
-One additional monitor for checking the program execution

VX510

Fixture

VGA Cable

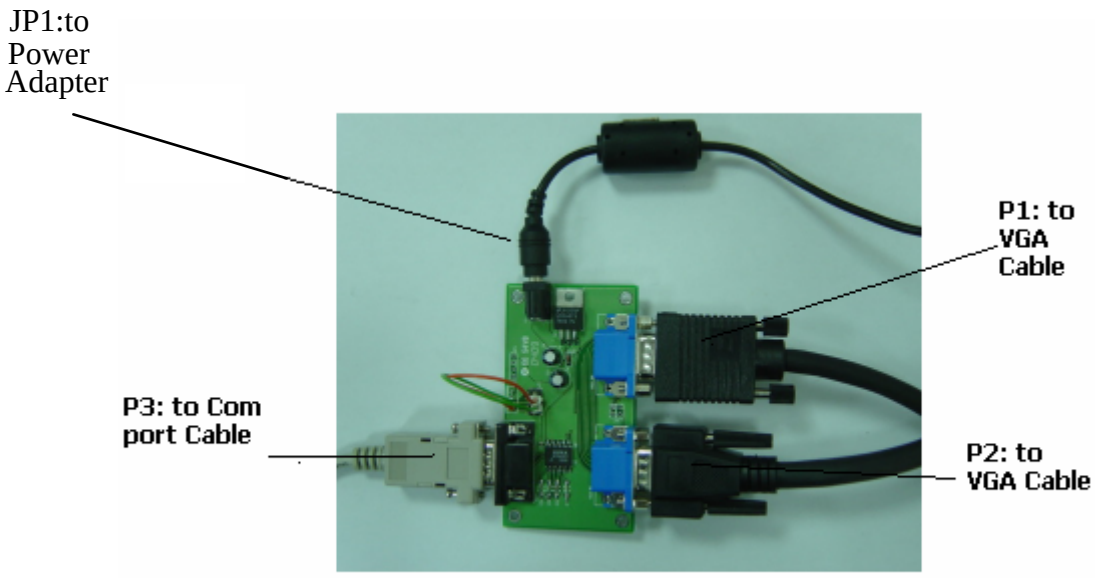
PC

Com port Cable

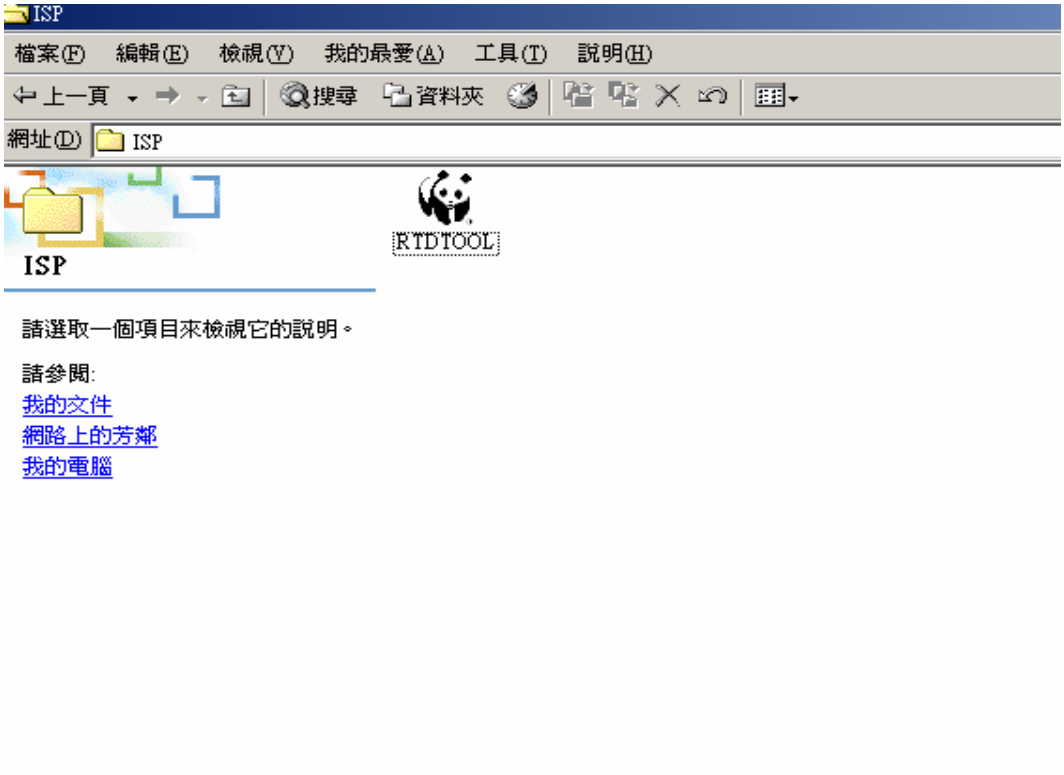
Power Adapter for Fixture

2-2 Setup Procedure

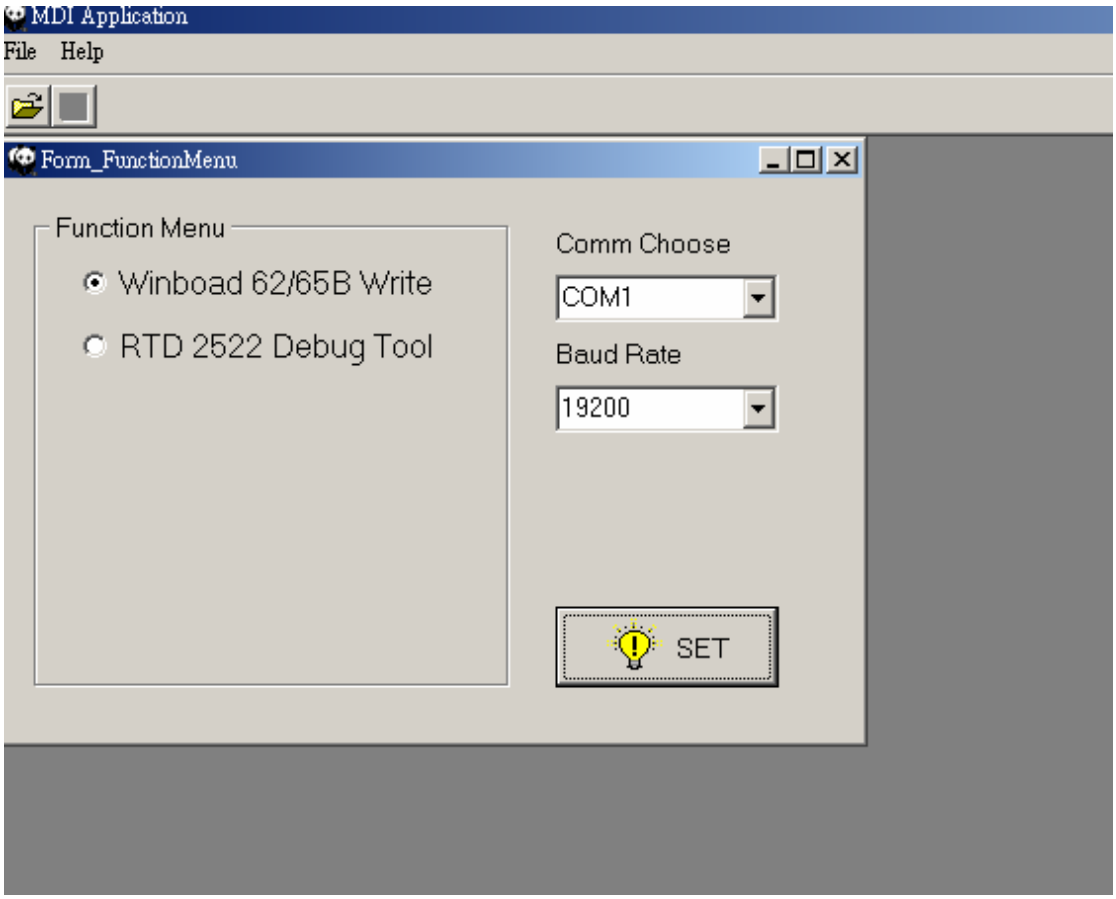
2.2.1 Connect P3 of fixture with Com port of PC by Com port Cable.
2.2.2 Connect P1 of fixture with VX510 Monitor by VAG Cable.
2.2.3 Connect P2 of fixture with PC VGA output by VAG Cable.
2.2.4 Plug Power Adapter to fixture.
2.2.5 Connect Power Card to VX510 Monitor.
2.2.6 Connect PC to the additional monitor.



2.2.7 Run “RTDTOOL”file



2.2.8 Choose ”Winboad 62/65B” and then push “SET” button

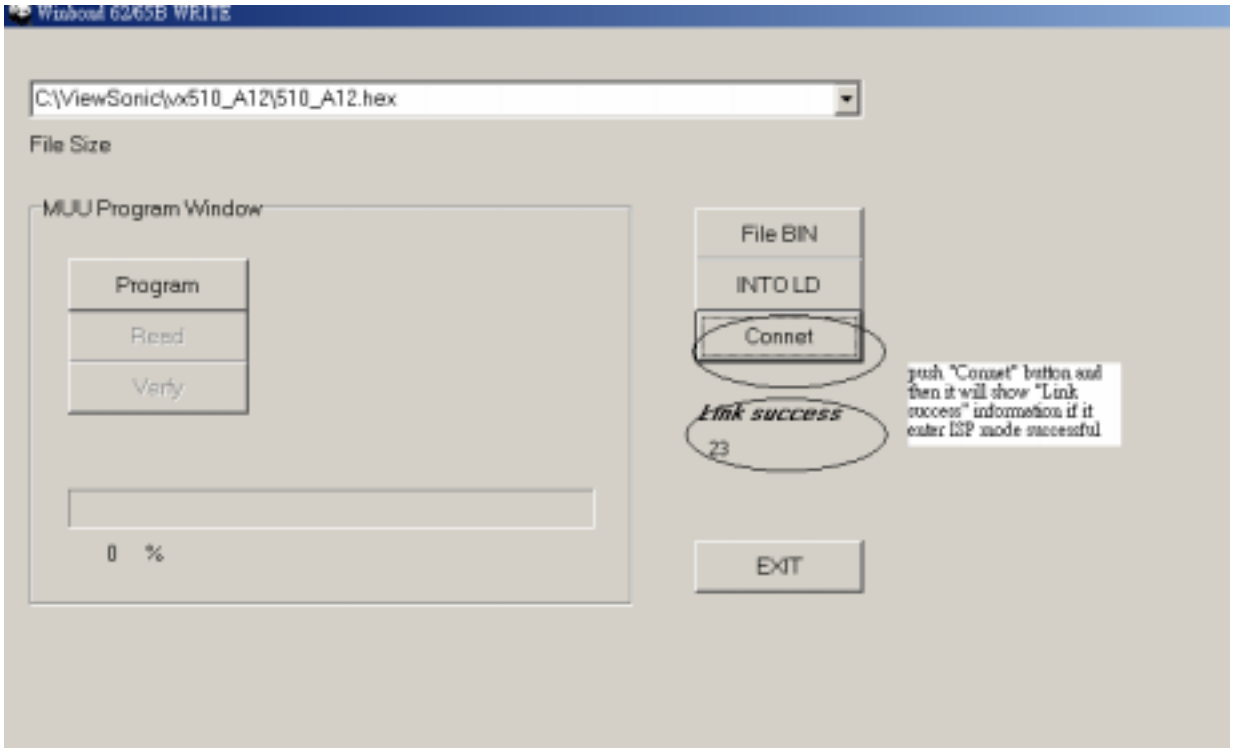


2.2.9 Push “File Bin” button and then choose the latest firmware that we want to upgrade

Step 1. Let VX510 enter ISP mode

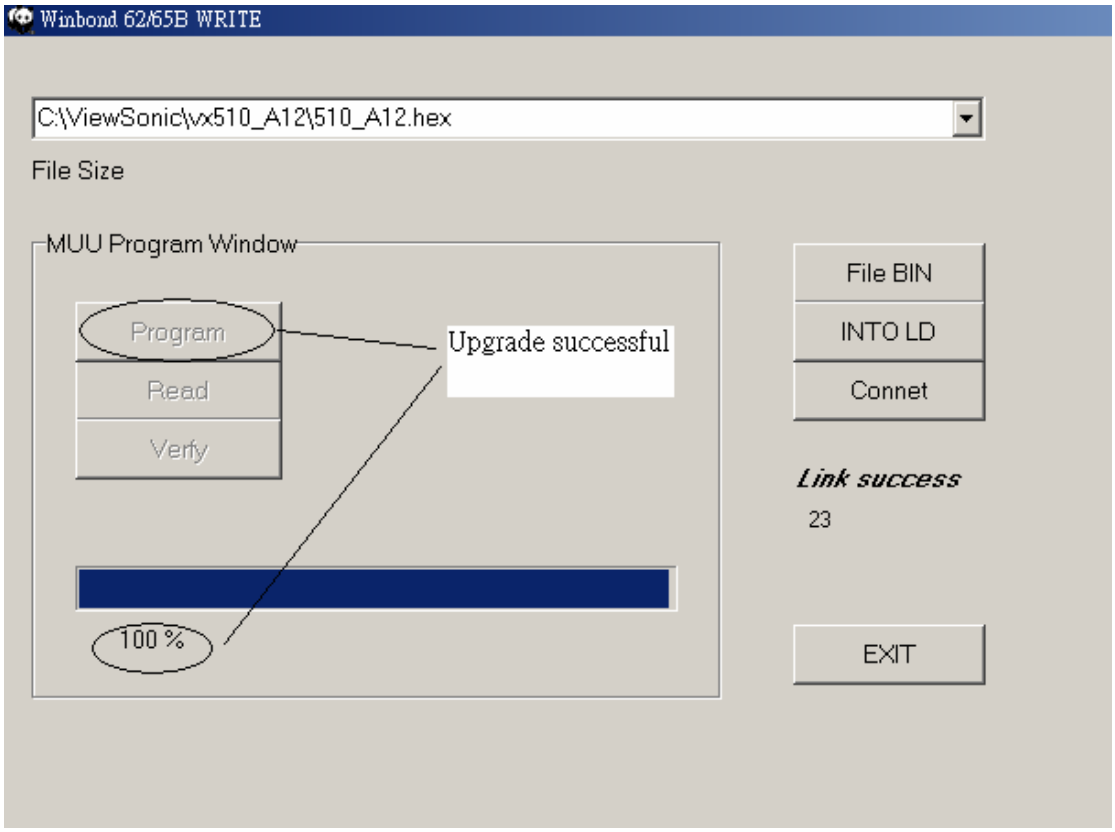
1.1 Press Menu key (keep on) than plug power to VX510 monitor after 2-3 second, and release away Menu key.

1.2 Press “Connect ” then enter the ISP mode.(software will show “Link success¨ if we enter the ISP mode successful)



Step 2 Push “Program” button and start to enter upgrade process

Step 3. Upgrade successful



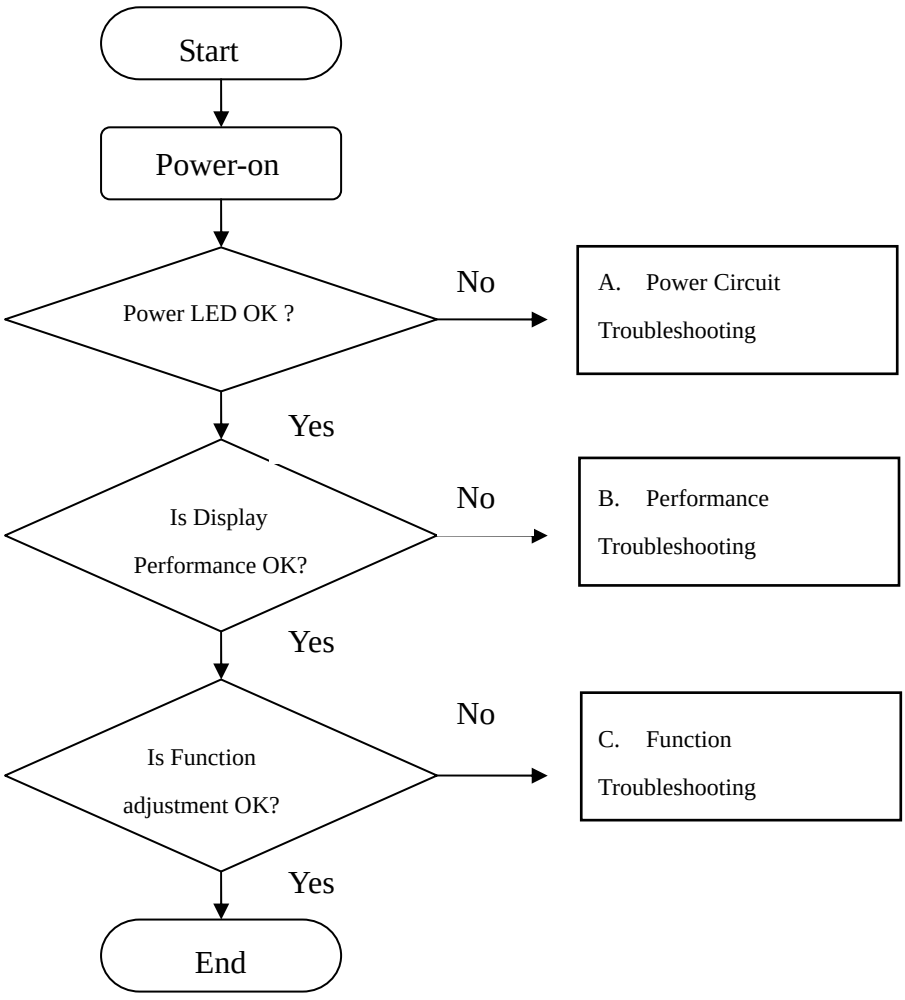
6. Trouble Shooting Flow Chart

This chapter provides technicians and people who have an electronic background a primary description about maintaining the product. Moreover, you can get the appropriate operation to solve some complicated problems of component repairing and professional problems.

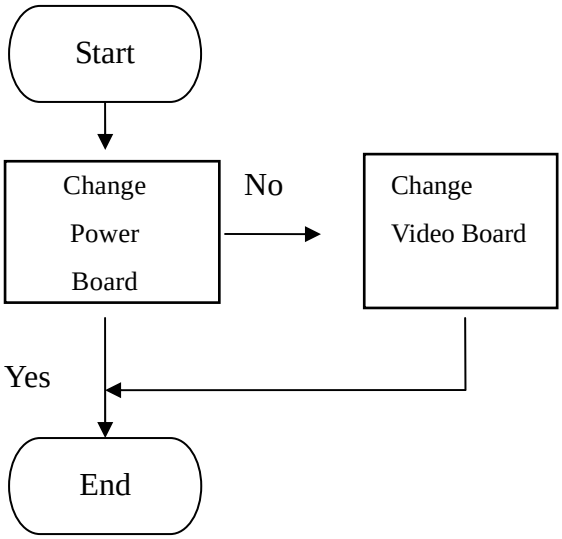
1. Equipment Needed

- VX510 Monitor
- Philips Screw Driver # 101 and # 107
- Electronic Hex Nut M5 mm
- PC with XGA resolution

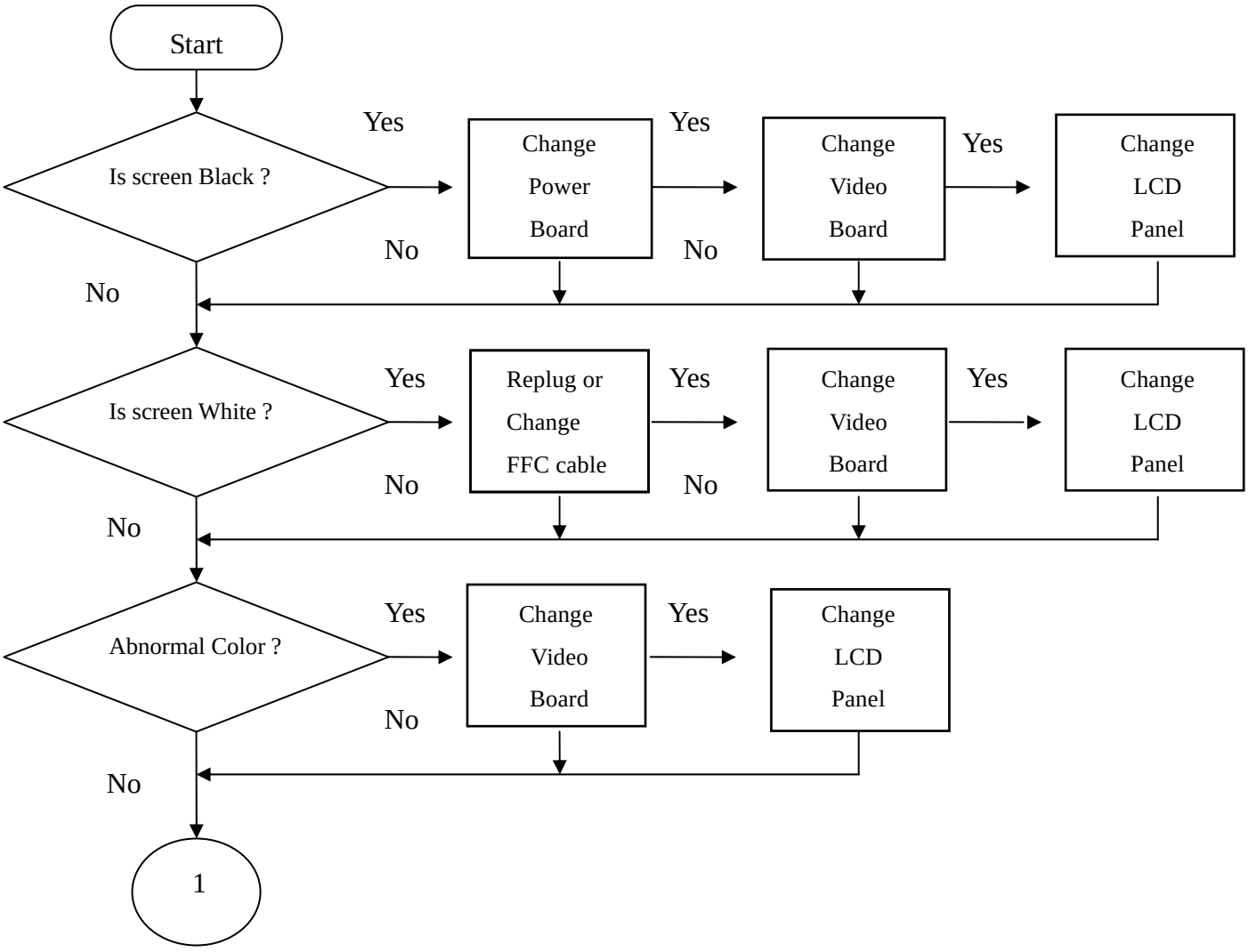
2. Main Procedure

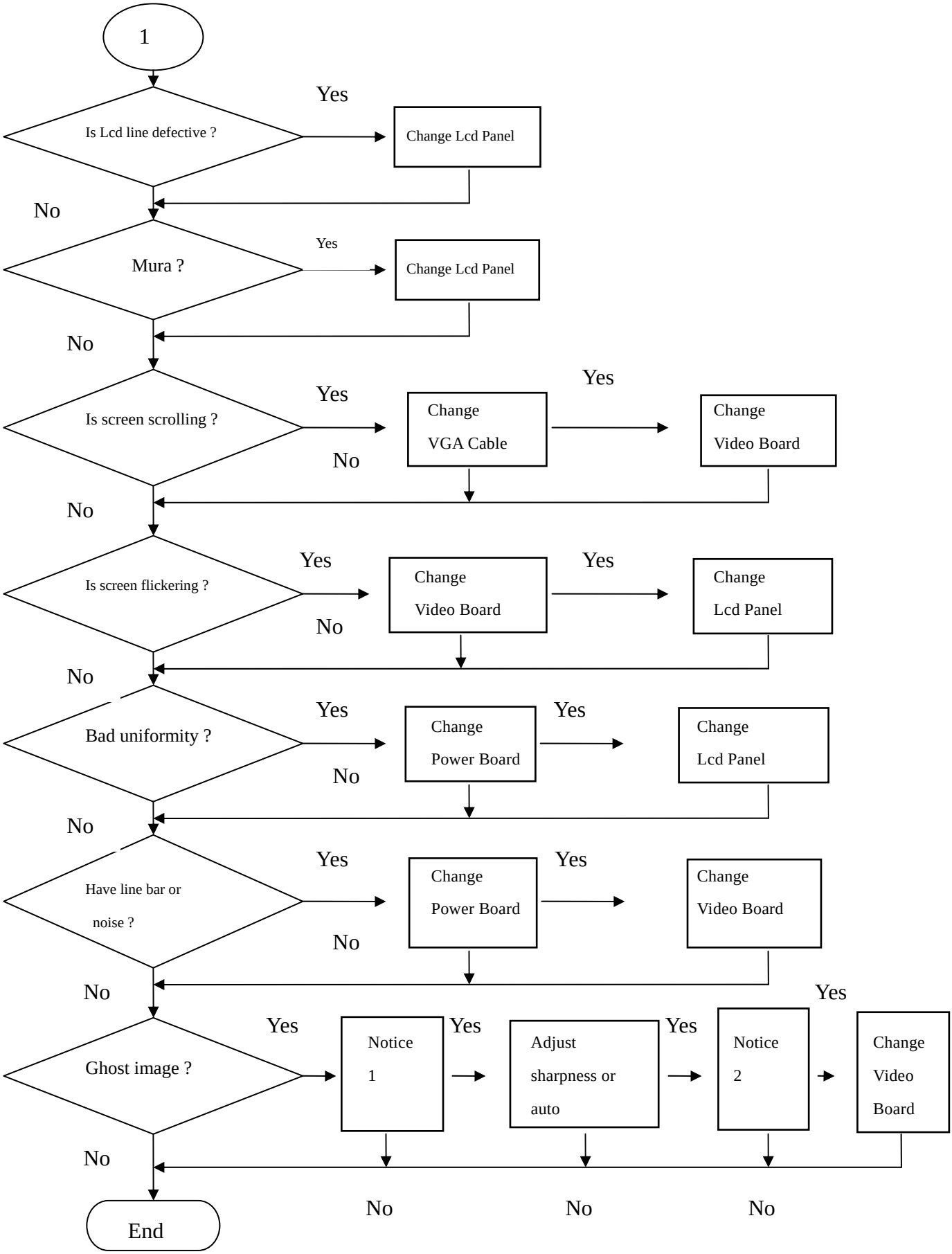


2.1 A. Power Circuit Troubleshooting



2.2 B. Performance Troubleshooting

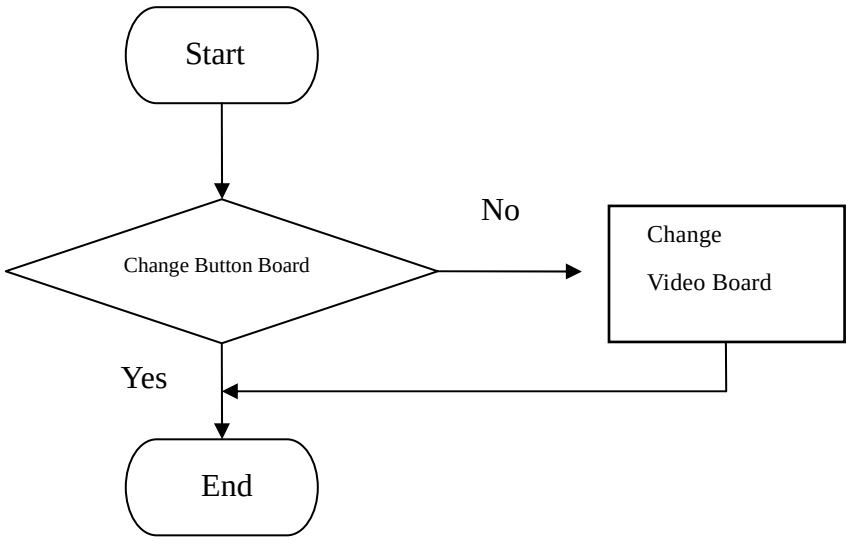



1
Is Lcd line defective ?
Yes
Change Lcd Panel
No
Mura ?
Yes
Change Lcd Panel
No
Is screen scrolling ?
Yes
Change VGA Cable
Yes
Change Video Board
No
No
Is screen flickering ?
Yes
Change Video Board
Yes
Change Lcd Panel
No
No
Bad uniformity ?
Yes
Change Power Board
Yes
Change Lcd Panel
No
No
Have line bar or noise ?
Yes
Change Power Board
Yes
Change Video Board
No
No
Ghost image ?
Yes
Notice 1
Yes
Adjust sharpness or auto
Yes
Notice 2
Yes
Change Video Board
No
No
No
No
End

Notice:

1. Make sure VGA cable connected to PC directly, not via anything like “data transfer “ or “ distribution". After this action if ghost image disappears , go to “ yes”; else go to “ no”.
2. Check the compatibility on the computer. If it is compatibility problem, feedback the information to ViewSonic ; else , go to “ no”

2.3 C. Function Troubleshooting



7. Recommended Spare Parts List

VX510 Recommended Spare Parts List

Item	VS P/N	Arima P/N	Description	Q'ty	Lead Time
	N/A	**K0015001000000**	**BASIC UNIT VX510**	**1**	
1	M-SCW-0824-0856	700473300-1000	SCREW TAPPING 3.0*10L P-HEAD P-TITE-ZN/B	6	10 days
	N/A	**K0015012000000**	**LCD PANEL ASSY VX510**	**1**	
2	B-CB-0206-0189	40-VF000T-C000	PWA BUTTON BOARD VF000	1	2 weeks
3	C-FP-0301-0997	K0015028000000	BEZEL SUB-ASSY VX510	1	4 weeks
	N/A	**K0015028000001**	**CHASSIS SUB-ASSY VX510**	**1**	
4	M-BK-0805-0082	K5120000000003	CHASSIS FRAME VX510	1	3 weeks
5	M-MS-0808-9478	K5120000000010	SHIELDING VX510	1	3 weeks
6	M-SCW-0824-0857	703014250-2500	SCREW PH M2.5*0.45 L4(DIA=4.5 T=0.8)	6	10 days
7	M-SCW-0824-0858	702114300-0600	SCREW MACHINE M3*6L B HEAD NI	9	10 days
8	M-SCW-0824-0859	700114303-0800	SCREW M3*8L P-HEAD W/SP+FLATE WASHER NI	1	10 days
9	M-LCD-0826-0225	37-125150-4900	LCD TFT 15.0" XGA HSD150SX84-G HANNSTAR	1	8 weeks
10	B-VB-0202-0355	40-VF0009-C000	PWA VIDEO BOARD VF000	1	2 weeks
11	B-PS-0204-0072	83-110119-0000	AC POWER SUPPLY&DC-AC INVERTER W/VF000	1	45 days
12	M-MS-0808-9479	32-000080-0000	CORE PL2508IG 25.5*15*4.5mm FOR VF000	2	45 days
13	M-FC-0809-0816	K5052000000000	CABLE ASSY FFC (40*56) VX510	2	30 days
14	M-MS-0808-9480	77X014006-4800	STANDOFF#4-40 H4.8(L7.0 THREAD)HEXA-4.75	2	10 days
15	**TBD**	K5120000000012	INSULATOR FOR SHIELDING VX510	2	2 weeks
16	**TBD**	700114406-0800	MACHINE SCREW M4*L8 PH W/EX TOOTH WASHE	1	10 days
17	**TBD**	K5310000000008	LABEL FOR WARNING-HIGH VOLTAGEL VX510	1	2 weeks
18	**TBD**	K5110000000015	AL FOIL FOR INVERTER WIRE OF PANEL VX510	1	TBD
19	M-FC-0809-0817	21-5H0001-0000	CABLE ASSY HARNESS 8P*8P 140mm W/VF000	1	30 days
20	M-SCW-0824-0860	702472300-0800	TAPPING SCREW 3.0*8L B HEAD P TITE Zn YL	10	10 days
	N/A	**K0015013000000**	**REAR COVER ASSY VX510**	**1**	
21	M-SCW-0824-0861	700374400-1200	SCREW TAPPING 4.0*12L P-HEAD B-TITE N	2	10 days
22	M-MS-0808-9481	K5110000000014	RUBBER WALL MOUNT PLUG(BLACK) VX510	4	2 weeks
23	M-MS-0808-9482	K5120000000004	PLATE HINGE VX510	1	3 weeks
24	M-MS-0808-9483	K5120000000006	PLATE WALL MOUNT VX510	4	3 weeks
25	M-WR-0828-0757	21-5W0000-0000	WIRE 1015 #18 AWG 100mm DA7835 GR/YEL	1	45days
26	C-BC-0302-0600	K0015028000002	COVER BACK SUB-ASSY VX510	1	4 weeks
	N/A	**K0015013000001**	**STAND ASSY VX510**	**1**	
27	M-SCW-0824-0862	700114401-0800	SCREW MACHINE M4*8L P-HEAD W/SP WASHER	4	10 days
28	M-CV-0830-0324	K5110000000005	BASE-TOP (SILVER) VX510	1	4 weeks
29	M-CV-0830-0325	K5110000000006	BASE BOTTOM (BLACK) VX510	1	4 weeks
30	M-CV-0830-0326	K5110000000009	COVER FRONT BASE(BLACK) VX510	1	4 weeks
31	M-MS-0808-9484	K5110000000011	CLAMP FOR AC D-SUB CABLE(PIN GOOD)CKK 05	2	4 weeks
32	M-MS-0808-9485	K5110000000013	RUBBER FOOT(GRAY)VX510	6	2 weeks
33	M-BK-0805-0083	K5120000000001	BRACKET L VX510	1	3 weeks
34	M-BK-0805-0084	K5120000000002	BRACKET R VX510	1	3 weeks
35	M-MS-0808-9486	K5120000000007	PLATE WEIGHT L(172.13) VX510	1	3 weeks
36	M-MS-0808-9487	K5120000000009	PLATE WEIGHT S(78.3) VX510	2	3 weeks
37	M-MS-0808-9488	K5120000000011	HINGE VX510	1	3 weeks
38	**TBD**	K5120000000013	PORON FOR PLATE WEIGHT VX510	2	2 weeks
39	M-SCW-0824-0862	700114401-0800	SCREW MACHINE M4*8L P-HEAD W/SP WASHER	2	10 days
40	M-CV-0830-0327	K5110000000007	COVER FOR AC D-SUB (BLACK) VX510	1	4 weeks
41	M-CV-0830-0328	K5110000000008	COVER FOR BASE CABLE (BLACK) VX510	1	4 weeks
	N/A	**K0015014000003**	**PACKING KIT VSA/VSAP (M) VX510**	**1**	
42	A-VC-0101-0378	21-5D0000-0000	CABLE ASSY D-SUB 15P H/D 9C W/CORE	1	10 weeks
43	A-PC-0106-0328	21-900212-0000	AC POWER CORD USA 3C BLACK W/VF000	1	30 days
44	M-MS-0808-9496	K0015020000000	VIEWSONIC QSG W/CD W/PE BAG VX510	1	3 weeks
45	M-LB-0813-1005	K5310000000001	SMALL LABEL 40*25 VX510	1	2 weeks
46	M-LB-0813-1006	K5310000000002	ID LABEL 108*48.9 VX510	1	2 weeks
47	M-LB-0813-1007	K5310000000003	UPC LABEL 76.2*76.2 VX510	1	2 weeks
48	M-LB-0813-1008	K5310000000004	HI-POT PASS LABEL VX510	1	2 weeks
49	M-LB-0813-1009	K5320000000001	NAME PLATE VIEWSONIC FRONT(E015-016-1)VX	1	10 days
50	M-LB-0813-1010	K5320000000002	LOGO BIRD FRONT(E015 004)AL7.9H VX510	1	10 days
51	M-LB-0813-1011	K5320000000003	LOGO VIEWSONIC ELLIPTIC BACK E015-017 VX	1	10 days
52	P-BX-0601-0975	K5510000000001	GIFT BOX VX510	1	10 days
53	P-FM-0602-0878	K5550000000001	POLY FOAM L VX510	1	2 weeks
54	P-FM-0602-0879	K5550000000002	POLY FOAM R VX510	1	2 weeks
55	M-MS-0808-9489	K5551000000001	PE BAG W420*H550 VX510	1	10 days
56	**TBD**	AAF155500025J0	PLASTIC HANDLE FOR SOTEC A0561	1	3 weeks
57	P-BX-0601-0976	K5510000000002	PLAIN GIFT BOX VX510	1	10 days

VX510 BOM

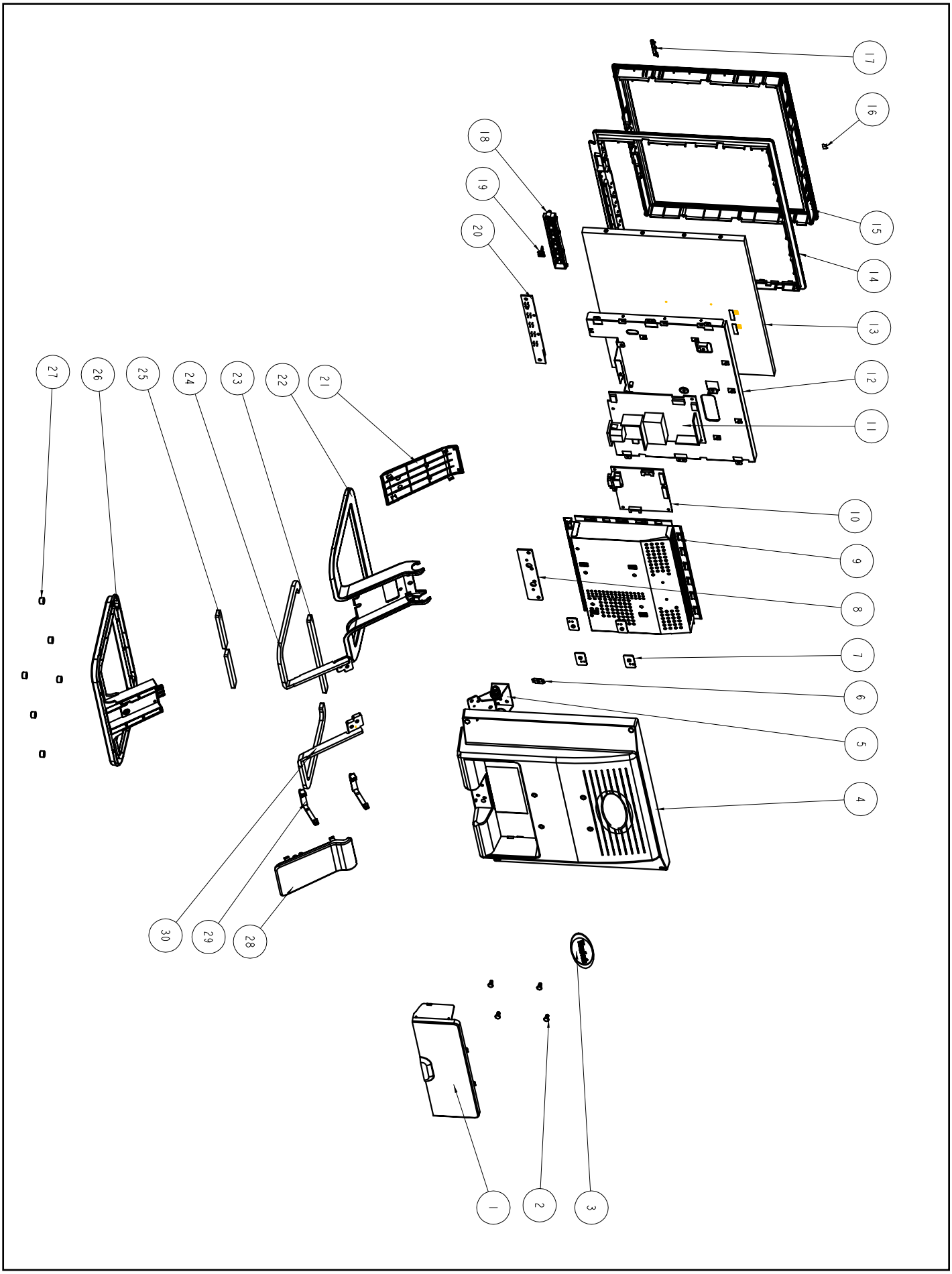
VX510-1 BOM

Item	ViewSonic P/N	Reference P/N	Description	Q'ty
1	#N/A	K0015001000000	BASIC UNIT VX510	1
2	M-SCW-0824-0856	700473300-1000	SCREW TAPPING 3.0*10L P-HEAD P-TITE-ZN/B	6
3	#N/A	K0015012000000	LCD PANEL ASSY VX510	1
4	B-CB-0206-0195	40-VF000T-B100	PWA BUTTON BOARD VF000	1
5	#N/A	36-020071-0000	TACT SW TC-0102X 160gf DIP	5
6	#N/A	37-018365-1300	LED 319YGW-C Y/G ROUND 2.9mm DIP	1
7	#N/A	39-316008-0600	CONN PLUG R/A 8P P:2mm 86808-0800 DIP	1
8	#N/A	41-VF000T-B000	PCB BUTTON BOARD VF000 Rev:B	1
9	C-FP-0301-0997	K0015028000000	BEZEL SUB-ASSY VX510	1
10	C-FP-0301-1036	K5110000000001	BEZEL (BLACK) VX510	1
11	M-CV-0830-2570	K5110000000003	COVER MIDDLE (SILVER) VX510	1
12	PL-BT-0706-0175	K5110000000004	BUTTON (SILVER) VX510	1
13	M-MS-0808-9742	K5110000000010	LENS FOR POWER LED (CLEAR) VX510	1
14	#N/A	702374300-0800	SCREW TAPPING 3.0*8L B-HEAD B-TITE NI	8
15	#N/A	K0015028000001	CHASSIS SUB-ASSY VX510	1
16	M-MS-0808-9479	32-000080-0000	CORE PL2508IG 25.5*15*4.5mm FOR VF000	2
17	M-BK-0805-0082	K5120000000003	CHASSIS FRAME VX510	1
18	M-MS-0808-9478	K5120000000010	SHIELDING VX510	1
19	M-SCW-0824-0857	703014250-2500	SCREW PH M2.5*0.45 L4(DIA=4.5 T=0.8)	6
20	M-SCW-0824-0858	702114300-0600	SCREW MACHINE M3*6L B HEAD NI	9
21	M-SCW-0824-0859	700114303-0800	SCREW M3*8L P-HEAD W/SP+FLATE WASHER NI	1
22	M-LCD-0826-0225	37-125150-4900	LCD TFT 15.0" XGA HSD150SX84-G HANNSTAR	1
23	#N/A	40-VF0009-A100	PWA VIDEO BOARD VF000	1
24	#N/A	10-002011-9700	IC RTD2011B FLAT LCD CONTROLLER QFP-208	1
25	#N/A	10-007865-9500	IC W78E65P-24/40 8BIT uCONTROLLER PLCC44	1
26	#N/A	12-107414-8300	IC 74LVC14AD SO-14	1
27	#N/A	14-63855L-7000	IC 24LC21AT/SN 1K(128*8) 2.5V SOP-8	1
28	#N/A	14-678553-7000	IC M24C16-WMN6T 16K(2K*8) 2.5V SOP-8	1
29	#N/A	18-001117-7700	IC LM1117MPX-3.3 REGULATOR SOT-223-3	2
30	#N/A	18-003904-9000	TR NPN MMBT3904 40V 200mA 225mW SOT-23	5
31	#N/A	18-008815-7700	IC AME8815BEGT250 1.5A REGULATOR SOT-223	1
32	#N/A	18-109435-9900	MOSFET P-CH CEM9435A 30V 5.3A SOP-8	1
33	#N/A	20-000042-8700	DIODE ZENER UDZS5.6B 5.6V 200mW SMD	6
34	#N/A	20-090099-8800	DIODE ARRAY BAV99 SWITCHING SOT-23	3
35	#N/A	20-100202-0200	DIODE SW TWIN DAN202U UMT 1.25*2.0	1
36	#N/A	30-000006-9500	RES CHIP 0ohm J 0603	7
37	#N/A	30-001016-9500	RES CHIP 100ohm J 0603	27
38	#N/A	30-001026-9500	RES CHIP 1Kohm J 0603	3
39	#N/A	30-001036-9500	RES CHIP 10Kohm J 0603	3
40	#N/A	30-001056-9500	RES CHIP 1Mohm J 0603	1
41	#N/A	30-002016-9500	RES CHIP 200ohm J 0603	1
42	#N/A	30-002226-9500	RES CHIP 2.2Kohm J 0603	2
43	#N/A	30-004726-9500	RES CHIP 4.7Kohm J 0603	18
44	#N/A	30-006816-9000	RES CHIP 680ohm J 0805	2
45	#N/A	30-008226-9500	RES CHIP 8.2Kohm J 0603	1
46	#N/A	30-175016-9500	RES 75 +-5% 1/16W 0603	3
47	#N/A	30-202026-9500	RES CHIP 1/16W 2Kohm 5% 0603	2
48	#N/A	30-202206-9500	RES CHIP 1/16W 22ohm 5% 0603	16
49	#N/A	30-202216-9500	RES CHIP 1/16W 220ohm 5% 0603 200ppm	3
50	#N/A	30-362204-8700	RES ARRAY CHIP 22ohm*4 J 1206	9
51	#N/A	31-103306-9500	CAP CERA CHIP 50V 33pF 5% X7R 0603	2
52	#N/A	31-132268-1200	CAP ELEC 16V 22uF M S5016M0022S5D DIP	4
53	#N/A	31-164737-9500	CAP CERA CHIP 16V 47nF K X7R 0603	3
54	#N/A	31-201049-9500	CAP CERA CHIP 50V 100nF Z Y5V 0603	43
55	#N/A	31-231068-1200	CAP ELEC CHIP 16V 10uF M 16CV10BS	1
56	#N/A	31-301003-9500	CAP CERA CHIP 50V 10pF D NPO 0603 TDK	5
57	#N/A	31-302006-9500	CAP CERA CHIP 50V 20pF 5% NPO 0603	1
58	#N/A	31-302206-9500	CAP CERA CHIP C0G 50V 220J 0603(22PF)	16
59	#N/A	31-364704-8300	CAP ARRAY CHIP 47pF*4 J NPO 1206	9
60	#N/A	31-481059-9500	CAP CERA CHIP 10V 1uF +80%/-20% Y5V 0603	3
61	#N/A	31-942278-1300	CAP ELEC 25V 220uF 20% 105'C 8*11mm L.I	1
62	#N/A	31-A31078-1200	CAP ELEC 16V 100uF M 6*5mm DIP W/CUT	3
63	#N/A	32-700603-1900	BEAD CHIP 19ohm 0.5A SBK160808T-190Y-S	3
64	#N/A	32-731206-6000	BEAD CHIP 60ohm 0.5A SBY321611T-600Y-S	7
65	#N/A	35-240002-4000	X'TAL 24MHz 20pF 20ppm 49S 6B24000377	1
66	#N/A	35-245762-4010	X'TAL 24.576MHz 6B24500292 W/CUT 3.4mm	1

VX510-1 BOM

Item	ViewSonic P/N	Reference P/N	Description	Q'ty
67	#N/A	38-020044-0300	SOCKET PLCC 44PIN SMD CS224410000	1
68	#N/A	38-418015-3J00	CONN D-SUB 15P R/A H/D A02003-11 DIP	1
69	#N/A	38-527040-0700	CONN FPC R/A 40P P:0.5mm BOT 88532-4003	2
70	#N/A	39-316008-0600	CONN PLUG R/A 8P P:2mm 86808-0800 DIP	2
71	#N/A	41-VF0009-A000	PCB VIDEO BOARD VF000	1
72	B-PS-0204-0072	83-110119-0000	AC POWER SUPPLY&DC-AC INVERTER W/VF000	1
73	M-FC-0809-0816	K5052000000000	CABLE ASSY FFC (40*56) VX510	2
74	M-FC-0809-0817	21-5H0001-0000	CABLE ASSY HARNESS 8P*8P 140mm W/VF000	1
75	M-SCW-0824-0860	702472300-0800	TAPPING SCREW 3.0*8L B HEAD P TITE Zn YL	8
76	#N/A	K0015013000000	REAR COVER ASSY VX510	1
77	M-SCW-0824-0861	700374400-1200	SCREW TAPPING 4.0*12L P-HEAD B-TITE N	2
78	M-MS-0808-9481	K5110000000014	RUBBER WALL MOUNT PLUG(BLACK) VX510	4
79	M-MS-0808-9482	K5120000000004	PLATE HINGE VX510	1
80	M-MS-0808-9483	K5120000000006	PLATE WALL MOUNT VX510	4
81	M-WR-0828-0757	21-5W0000-0000	WIRE 1015 #18 AWG 100mm DA7835 GR/YEL	1
82	C-BC-0302-0600	K0015028000002	COVER BACK SUB-ASSY VX510	1
83	C-BC-0302-0618	K5110000000002	COVER BACK (BLACK) VX510	1
84	M-MS-0808-9743	K5120000000005	PLATE K LOCK VX510	1
85	#N/A	K0015013000001	STAND ASSY VX510	1
86	M-SCW-0824-0862	700114401-0800	SCREW MACHINE M4*8L P-HEAD W/SP WASHER	4
87	M-CV-0830-0324	K5110000000005	BASE-TOP (SILVER) VX510	1
88	M-CV-0830-0325	K5110000000006	BASE BOTTOM (BLACK) VX510	1
89	M-CV-0830-0326	K5110000000009	COVER FRONT BASE(BLACK) VX510	1
90	M-MS-0808-9484	K5110000000011	CLAMP FOR AC D-SUB CABLE(PIN GOOD)CKK 05	2
91	M-MS-0808-9485	K5110000000013	RUBBER FOOT(GRAY)VX510	6
92	M-BK-0805-0083	K5120000000001	BRACKET L VX510	1
93	M-BK-0805-0084	K5120000000002	BRACKET R VX510	1
94	M-MS-0808-9486	K5120000000007	PLATE WEIGHT L(172.13) VX510	1
95	#N/A	K5120000000008	PLATE WEIGHT M(107.83) VX510	2
96	M-MS-0808-9487	K5120000000009	PLATE WEIGHT S(78.3) VX510	2
97	M-MS-0808-9488	K5120000000011	HINGE VX510	1
98	M-SCW-0824-0862	700114401-0800	SCREW MACHINE M4*8L P-HEAD W/SP WASHER	4
99	M-CV-0830-0327	K5110000000007	COVER FOR AC D-SUB (BLACK) VX510	1
100	M-CV-0830-0328	K5110000000008	COVER FOR BASE CABLE (BLACK) VX510	1
101	#N/A	K0015014000001	PACKING KIT VSCN (G) VX510	1
102	A-VC-0101-0378	21-5D0000-0000	CABLE ASSY D-SUB 15P H/D 9C W/CORE	1
103	#N/A	21-900214-0000	AC POWER CORD CHINA 3C CCC BLACK W/VF000	1
104	M-MS-0808-9496	K0015020000000	VIEWSONIC QSG W/CD W/PE BAG VX510	1
105	#N/A	K0015020000001	WARRANTY CARD W/STICKER,BAG VSCN(G) CN	1
106	M-LB-0813-1005	K5310000000001	SMALL LABEL 40*25 VX510	1
107	M-LB-0813-1006	K5310000000002	ID LABEL 108*48.9 VX510	1
108	M-LB-0813-1007	K5310000000003	UPC LABEL 76.2*76.2 VX510	1
109	M-LB-0813-1008	K5310000000004	HI-POT PASS LABEL VX510	1
110	#N/A	K5310000000006	QC-PASS LABEL VX510	1
111	#N/A	K5310000000007	CARTON STICKET LABEL VX510	1
112	M-LB-0813-1009	K5320000000001	NAME PLATE VIEWSONIC FRONT(E015-016-1)VX	1
113	M-LB-0813-1010	K5320000000002	LOGO BIRD FRONT(E015 004)AL7.9H VX510	1
114	M-LB-0813-1011	K5320000000003	LOGO VIEWSONIC ELLIPTIC BACK E015-017 VX	1
115	P-BX-0601-0975	K5510000000001	GIFT BOX VX510	1
116	P-FM-0602-0878	K5550000000001	POLY FOAM L VX510	1
117	P-FM-0602-0879	K5550000000002	POLY FOAM R VX510	1
118	M-MS-0808-9489	K5551000000001	PE BAG W420*H550 VX510	1
119	#N/A	K5551000000002	PE BAG OF CARTON VX510	1
120	M-MS-0808-9558	AAF155500025J0	PLASTIC HANDLE FOR SOTEC A0561	1
121	#N/A	AA905310000810	LABEL SECURITY FOR BOE A0062	1

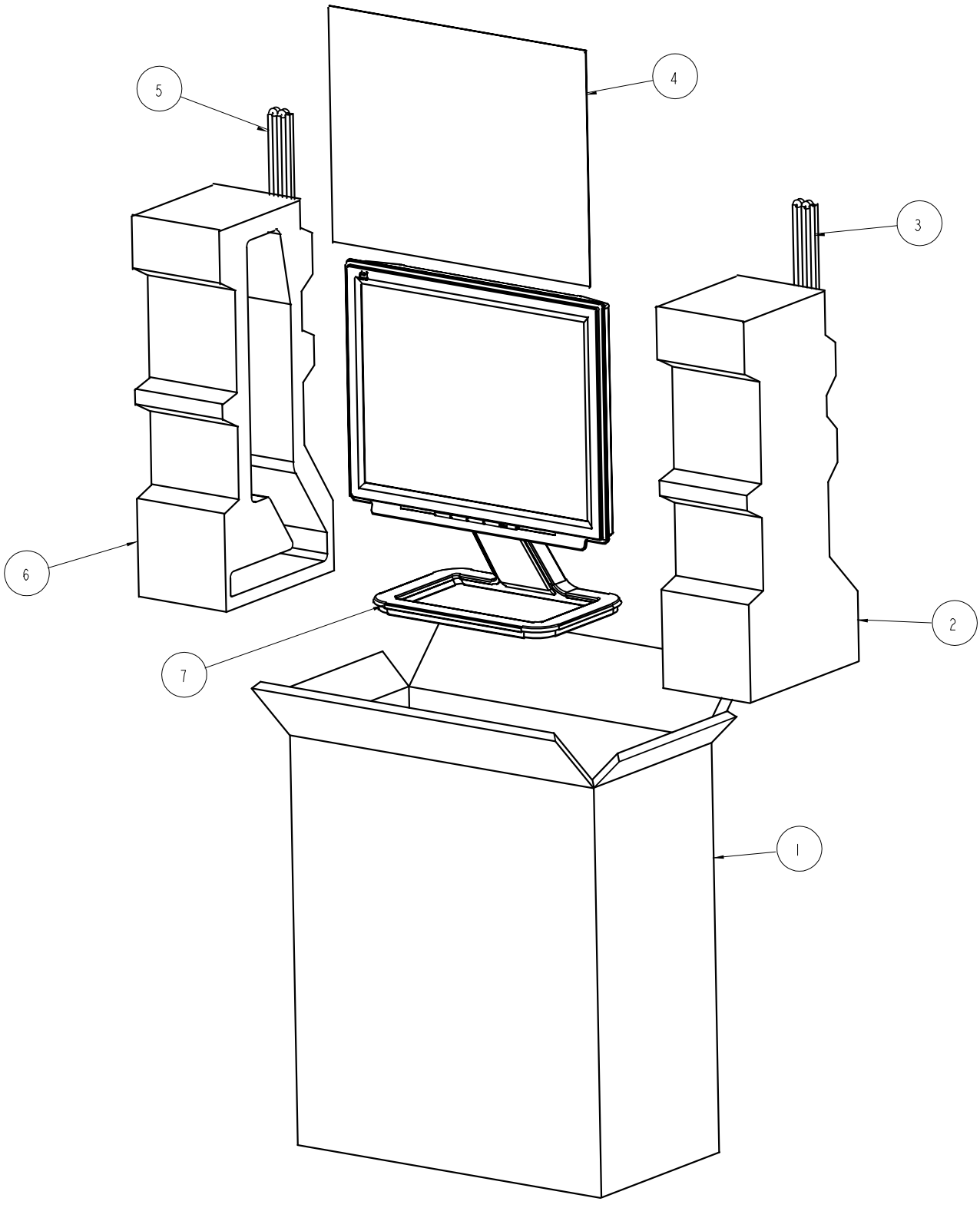
8. Exploded Diagram And Spare Parts List



VX510-1 Exploded Part List

Item	ViewSonic P/N	Reference P/N	Description	Q'ty
1	C-FP-0301-1036	K5110000000001	BEZEL (BLACK) VX510	1
2	M-CV-0830-2570	K5110000000003	COVER MIDDLE (SILVER) VX510	1
3	PL-BT-0706-0175	K5110000000004	BUTTON (SILVER) VX510	1
4	M-MS-0808-9742	K5110000000010	LENS FOR POWER LED (CLEAR) VX510	1
5	M-BK-0805-0082	K5120000000003	CHASSIS FRAME VX510	1
6	M-MS-0808-9478	K5120000000010	SHIELDING VX510	1
7	M-MS-0808-9481	K5110000000014	RUBBER WALL MOUNT PLUG(BLACK) VX510	4
8	M-MS-0808-9482	K5120000000004	PLATE HINGE VX510	1
9	M-MS-0808-9483	K5120000000006	PLATE WALL MOUNT VX510	4
10	C-BC-0302-0618	K5110000000002	COVER BACK (BLACK) VX510	1
11	M-MS-0808-9743	K5120000000005	PLATE K LOCK VX510	1
12	M-CV-0830-0324	K5110000000005	BASE-TOP (SILVER) VX510	1
13	M-CV-0830-0325	K5110000000006	BASE BOTTOM (BLACK) VX510	1
14	M-CV-0830-0326	K5110000000009	COVER FRONT BASE(BLACK) VX510	1
15	M-MS-0808-9484	K5110000000011	CLAMP FOR AC D-SUB CABLE(PIN GOOD)CKK 05	2
16	M-MS-0808-9485	K5110000000013	RUBBER FOOT(GRAY)VX510	6
17	M-BK-0805-0083	K5120000000001	BRACKET L VX510	1
18	M-BK-0805-0084	K5120000000002	BRACKET R VX510	1
19	M-MS-0808-9486	K5120000000007	PLATE WEIGHT L(172.13) VX510	1
20	M-MS-0808-9487	K5120000000009	PLATE WEIGHT S(78.3) VX510	2
21	M-MS-0808-9488	K5120000000011	HINGE VX510	1
22	M-CV-0830-0327	K5110000000007	COVER FOR AC D-SUB (BLACK) VX510	1
23	M-CV-0830-0328	K5110000000008	COVER FOR BASE CABLE (BLACK) VX510	1
24	M-LB-0813-1009	K5320000000001	NAME PLATE VIEWSONIC FRONT(E015-016-1)VX	1
25	M-LB-0813-1010	K5320000000002	LOGO BIRD FRONT(E015 004)AL7.9H VX510	1
26	M-LB-0813-1011	K5320000000003	LOGO VIEWSONIC ELLIPTIC BACK E015-017 VX	1
27	B-CB-0206-0195	40-VF000T-B100	PWA BUTTON BOARD VF000	1
28	B-VB-0202-0361	40-VF0009-B200	PWA VIDEO BOARD VF000	1
29	B-PS-0204-0072	83-110119-0000	AC POWER SUPPLY&DC-AC INVERTER W/VF000	1
30	M-LCD-0826-0225	37-125150-4900	LCD TFT15.0" XGA HSD150SX84-G HANNSTAR	1

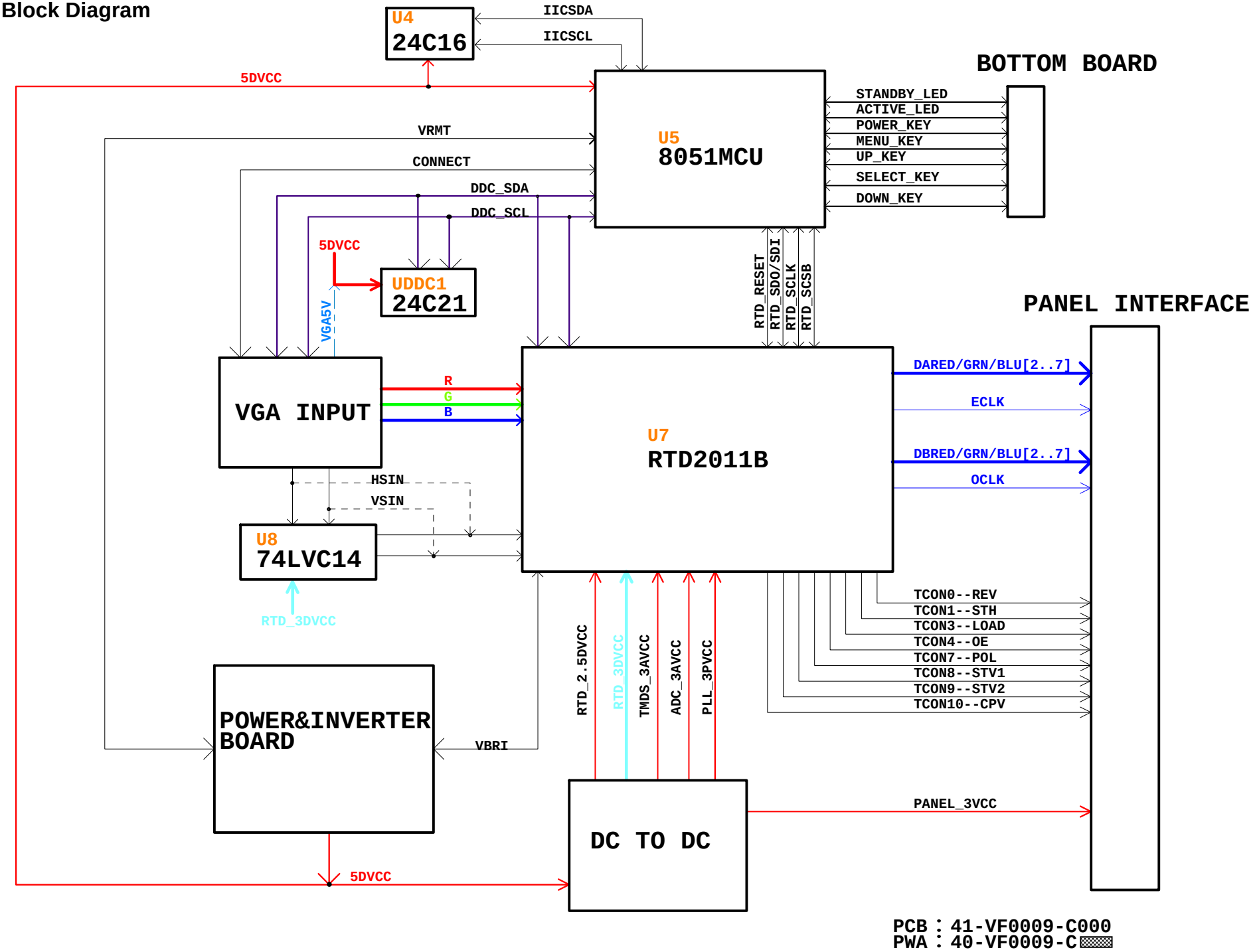
Packing for shipping



VX510-1 Packing Part List

Item	ViewSonic P/N	Reference P/N	Description	Q'ty
1	P-FM-0602-0878	K5550000000001	GIFT BOX VX510	1
2	M-MS-0808-9489	K5551000000003	POLY FOAM R 01 VX510	1
3	A-VC-0101-0378	21-5D0000-0000	CABLE ASSY D-SUB 15P H/D 9C W/CORE	1
4	M-MS-0808-9489	K5551000000003	PE BAG W420*H650 VX510	1
5	A-PC-0106-0336	21-900214-0000	AC POWER CORD CHINA 3C CCCBLACK W/VF000	1
6	P-FM-0602-0879	K5550000000004	POLY FOAM L 01 VX510	1

9. Block Diagram



PCB : 41-VF0009-C000
PWA : 40-VF0009-C▩

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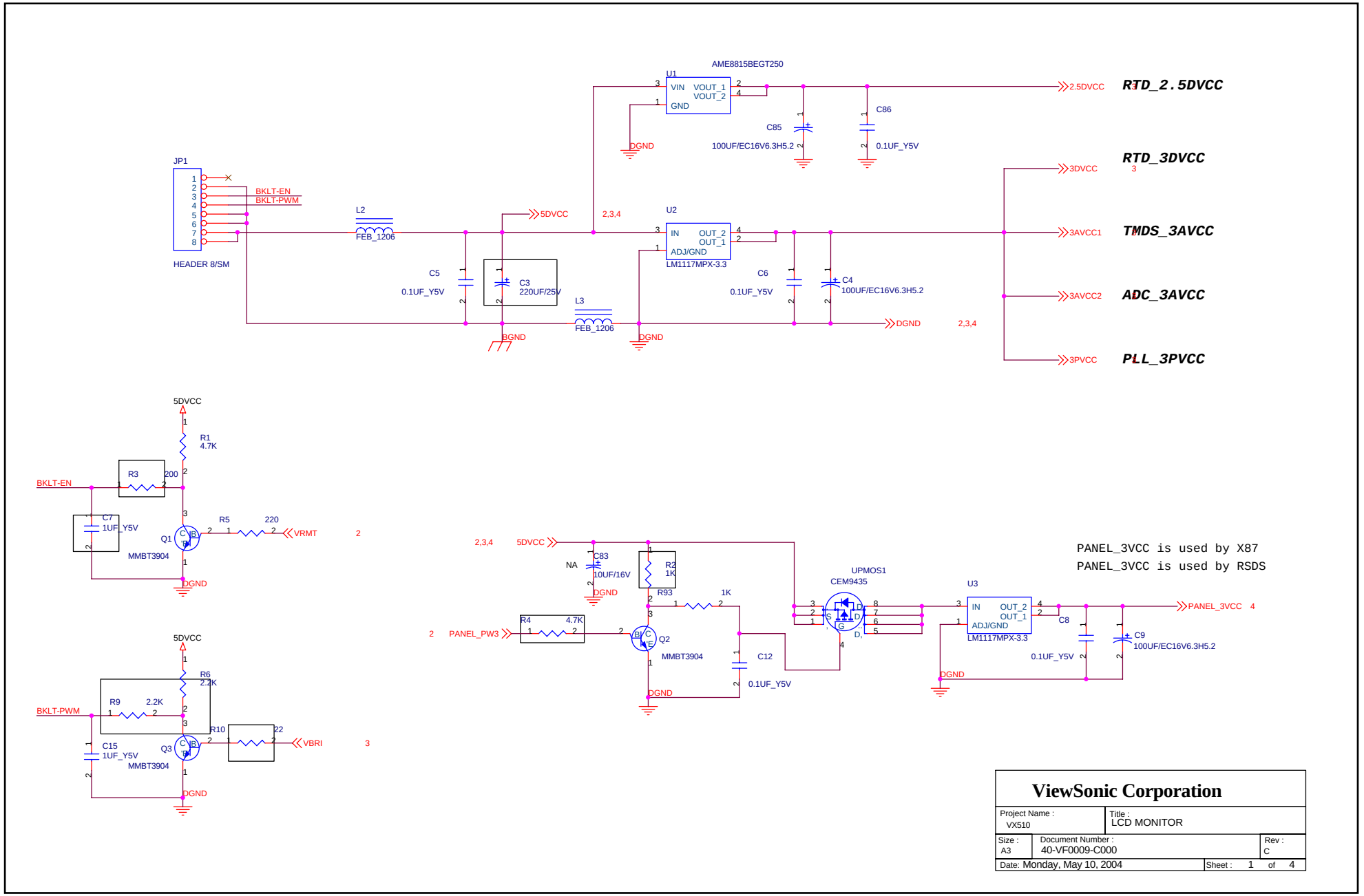
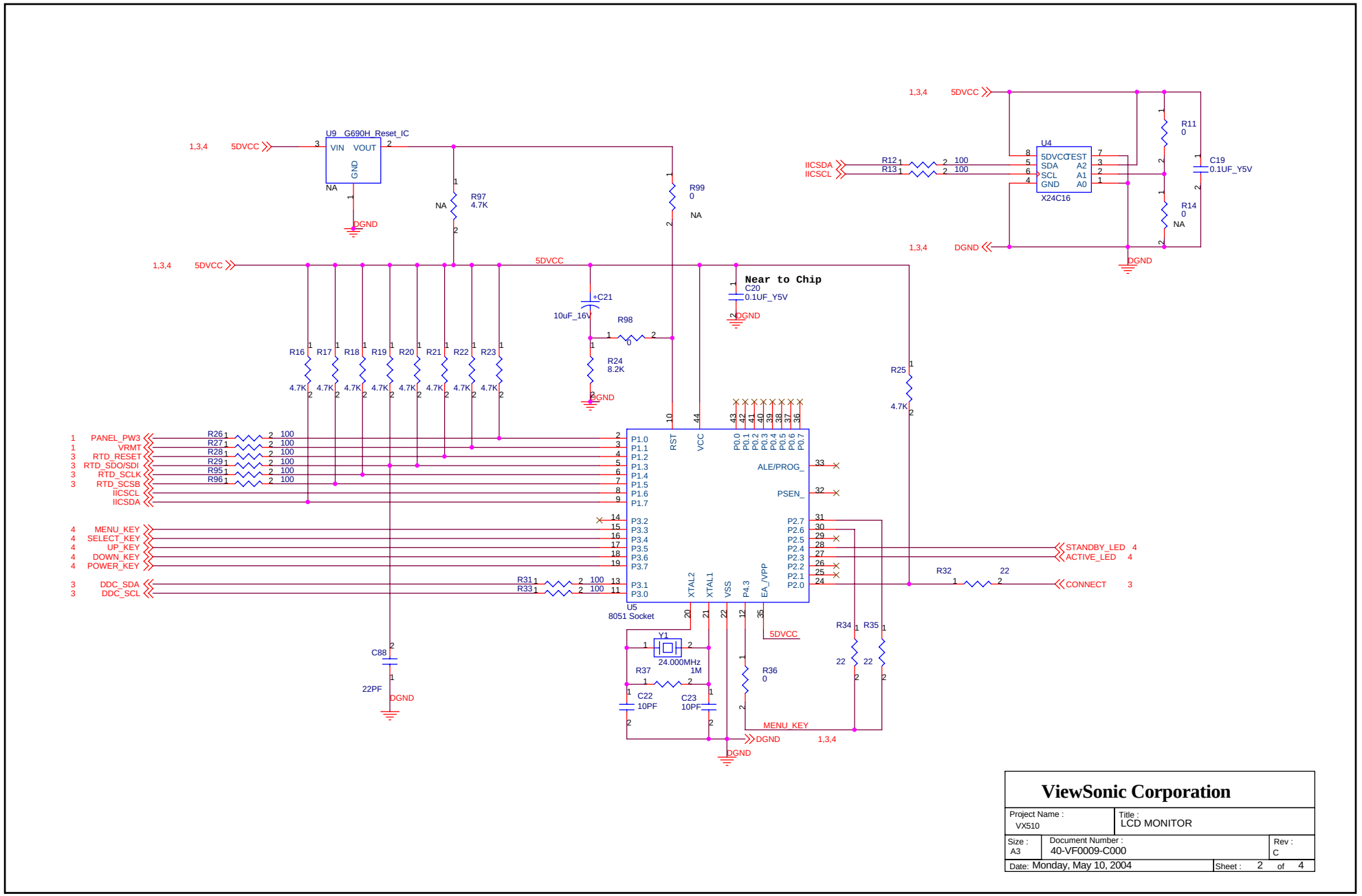
10. Schematic Diagrams





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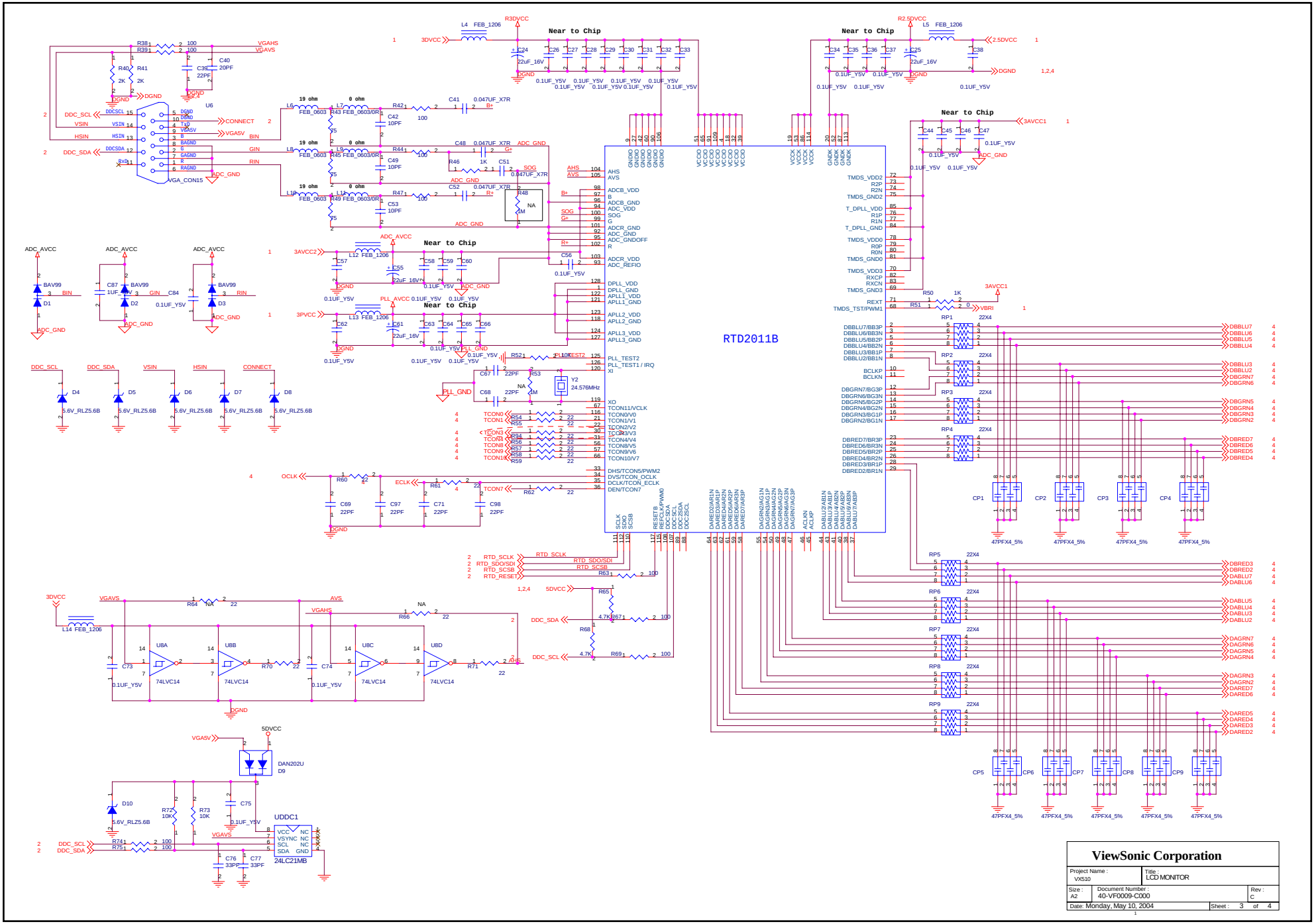
Size : A3	Document Number : 40-VF0009-C000	Rev : C
Date: Monday, May 10, 2004	Sheet : 2 of 4	


RTD2011B
ViewSonic Corporation
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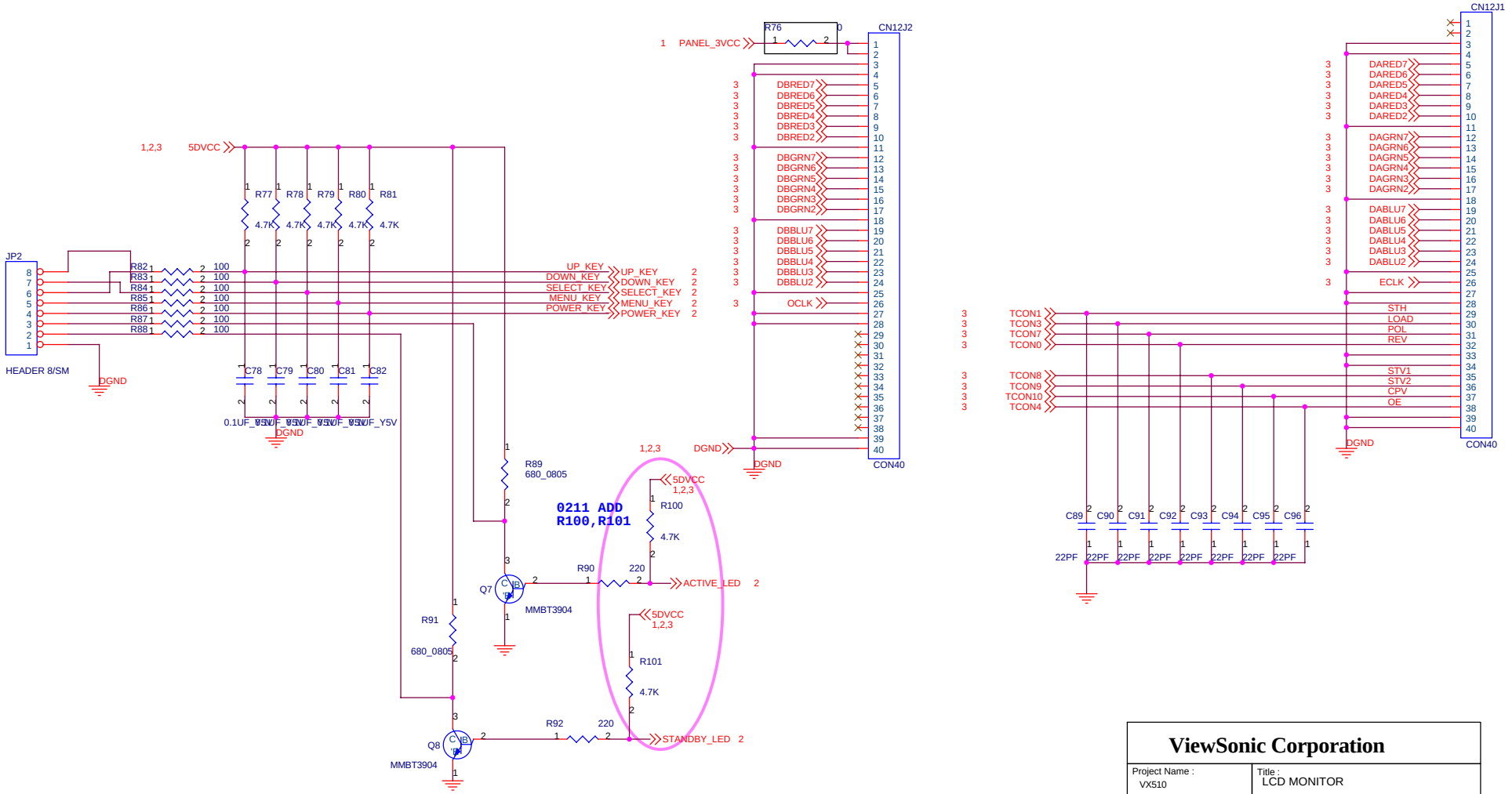
Title : LCD MONITOR
Size : A2
Document Number : 40-VF0009-C000
Rev : C
Date: Monday, May 10, 2004
Sheet : 3 of 4



ViewSonic Corporation		
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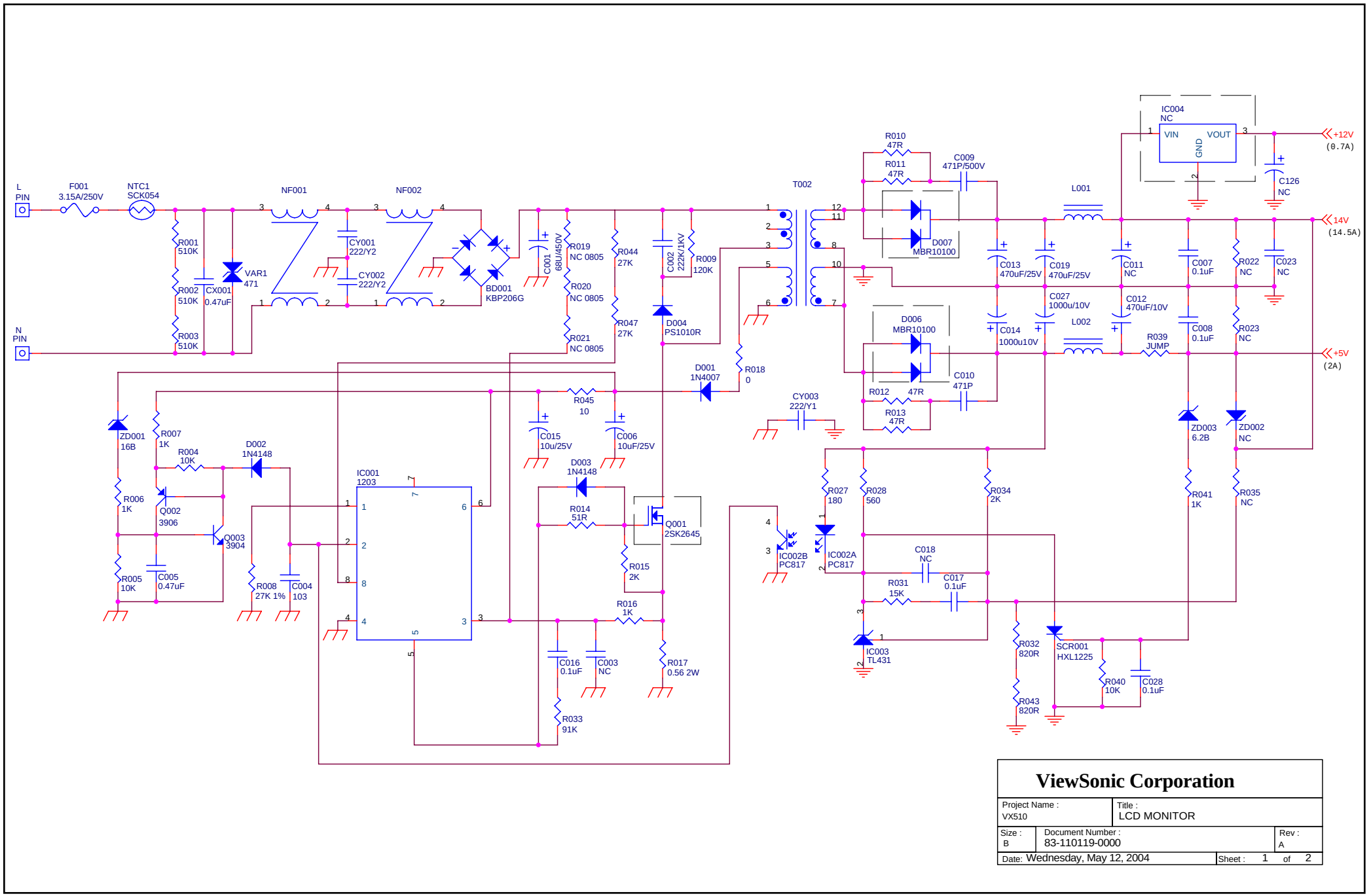
Date: Monday, May 10, 2004	Sheet : 4 of 4	



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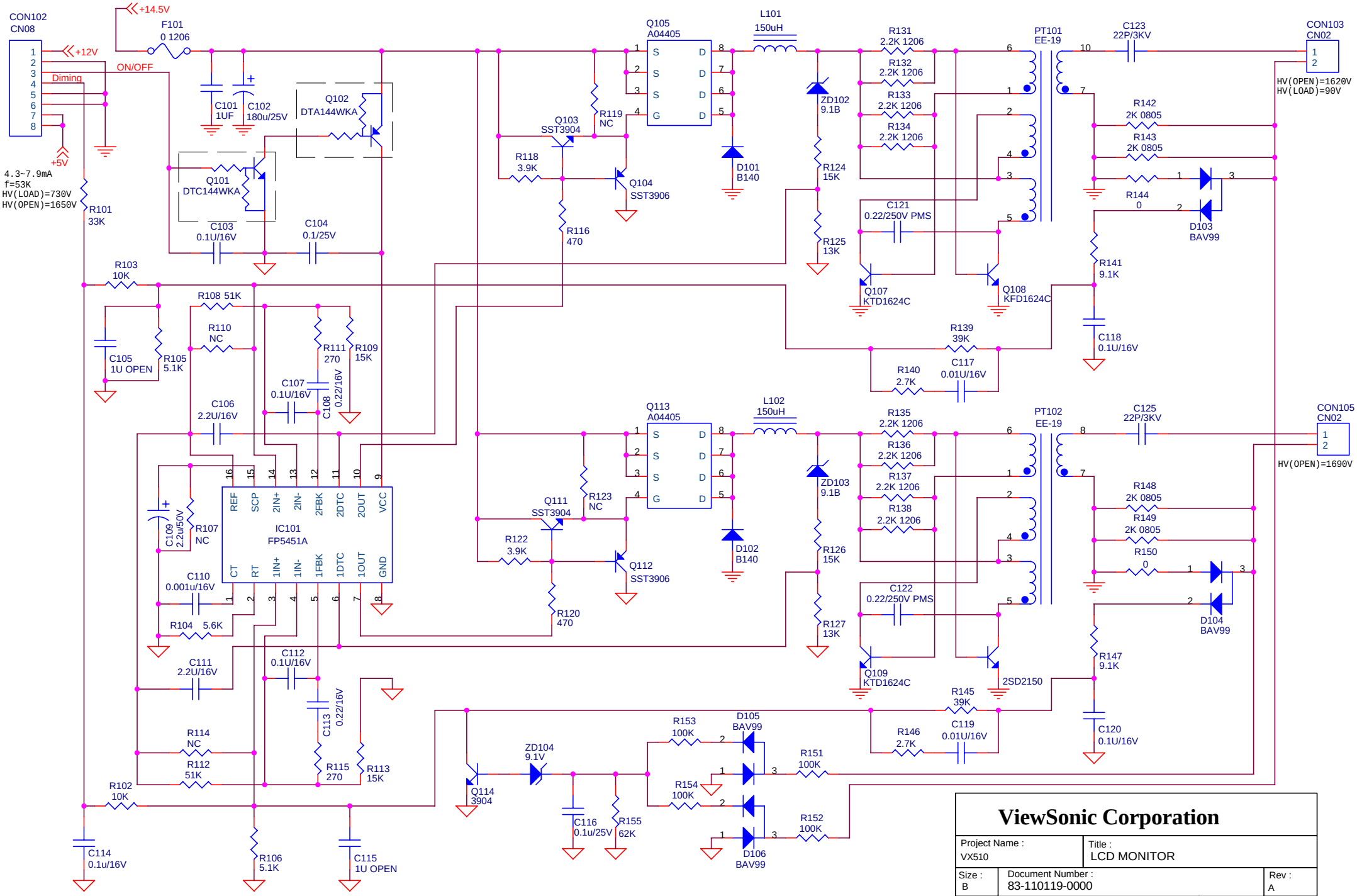
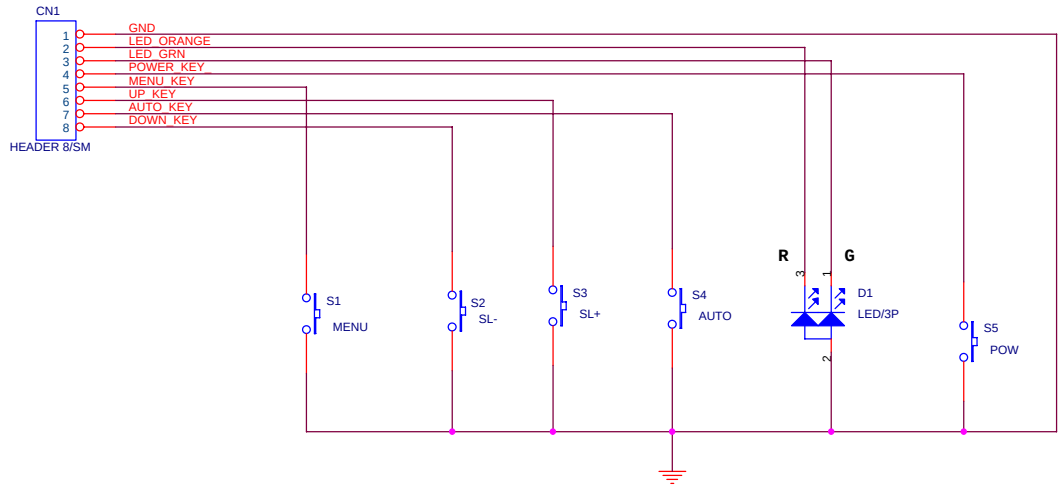
Size : B	Document Number : 83-110119-0000	Rev : A
Date: Wednesday, May 12, 2004	Sheet : 1 of 2	



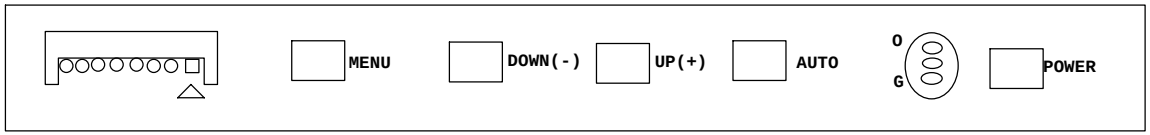
ViewSonic Corporation

Project Name : VX510	Title : LCD MONITOR	
Size : B	Document Number : 83-110119-0000	Rev : A
Date: Wednesday, May 12, 2004	Sheet : 2 of 2	

Schematic Diagrams --Button Board



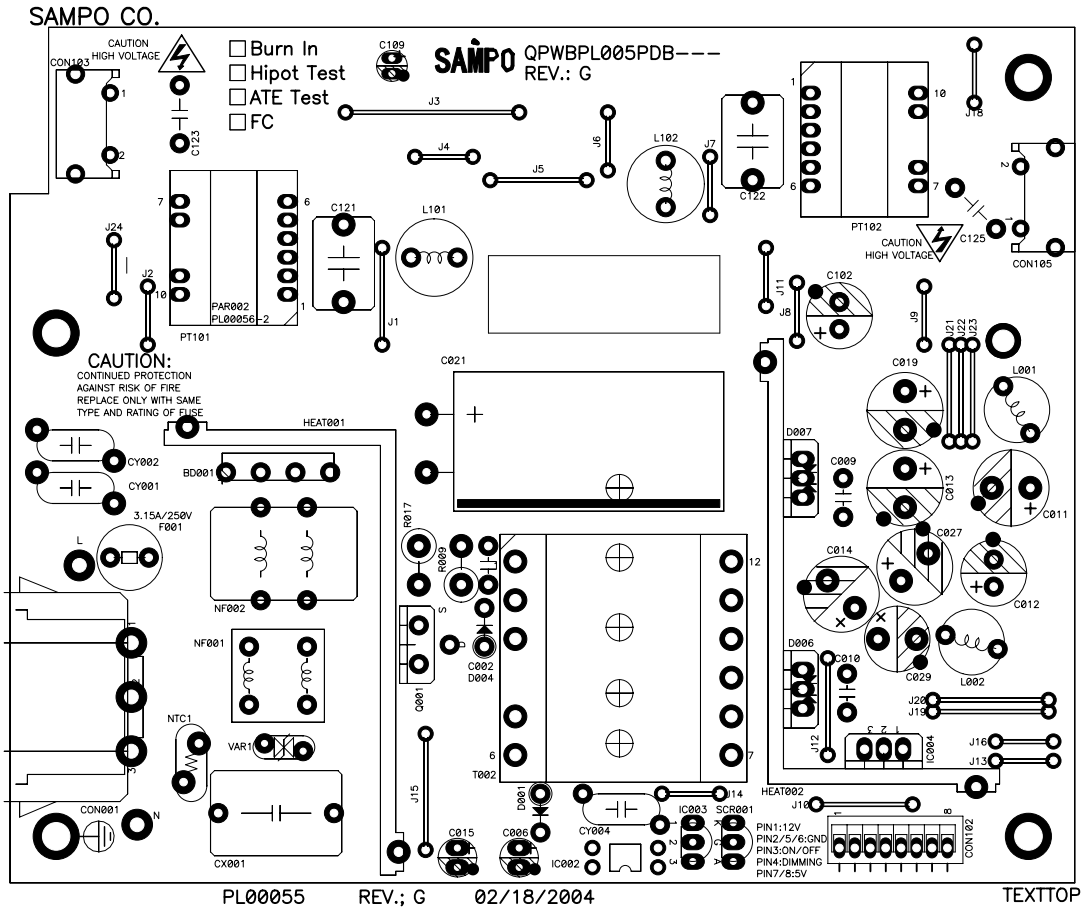
TOP



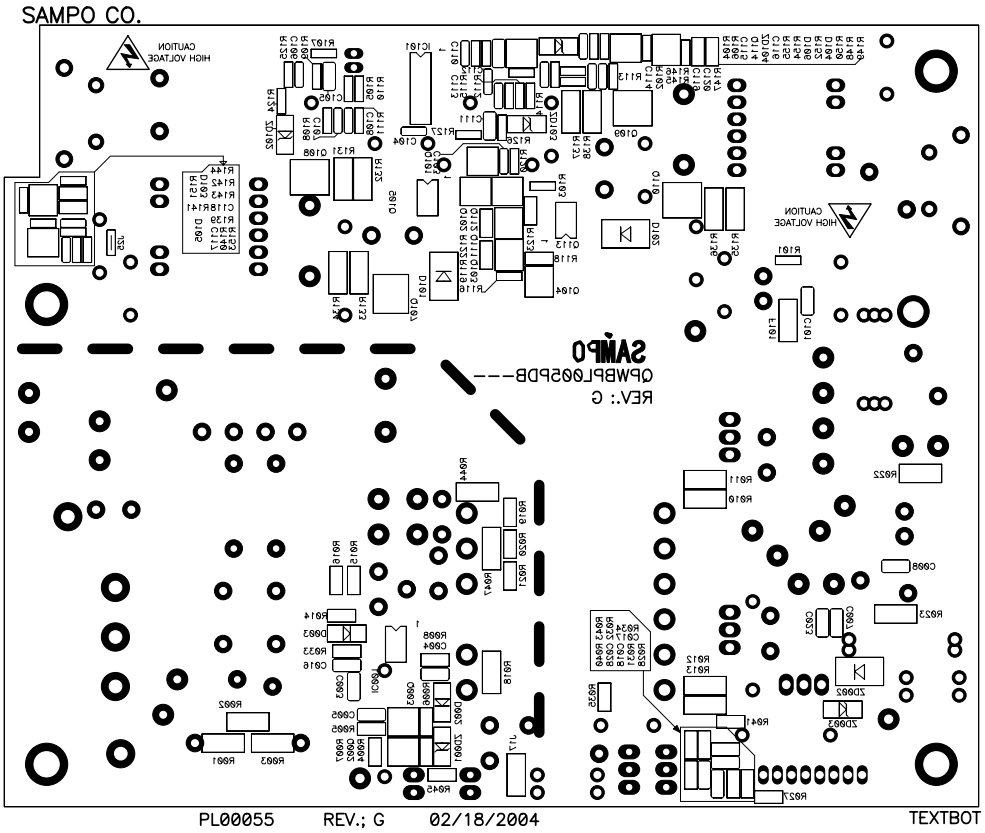
ViewSonic Corporation		
Project Name : VX510	Title : LCD MONITOR	
Size : A3	Document Number : 40-VF000T-C000	Rev : C
Date: Monday, May 10, 2004	Sheet : 1 of 1	

11. PCB Layout Diagrams

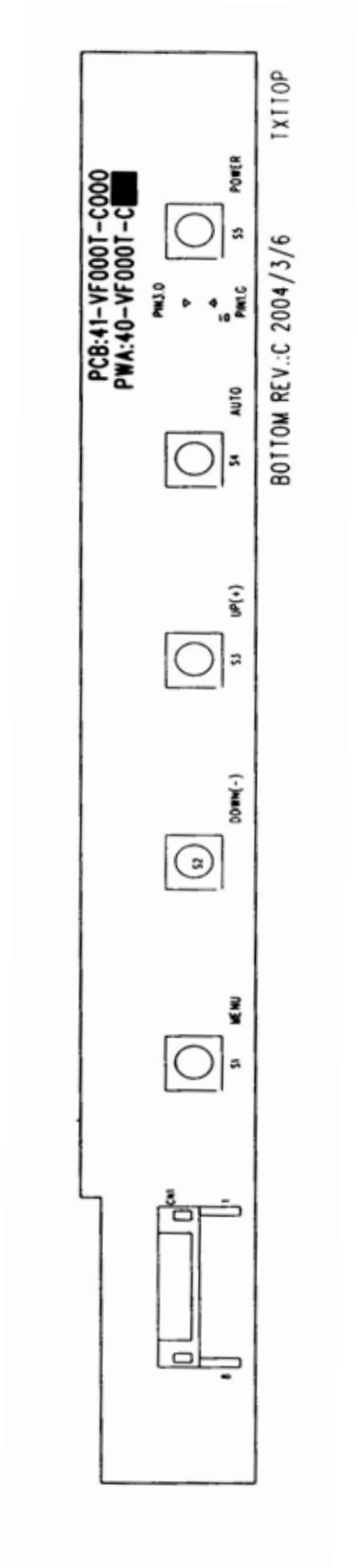
Power Board PCB top view



Power Board PCB bottom view



Button Board PCB top view



Reader's Response

Dear Readers:

Thank you in advance for your feedback on our Service Manual,which allows continuous improvement of our products. We would appreciate your completion of the Assessment Matrix below, for return to ViewSonic Corporation.

Assessment

A.What do you think about the content after reading **VX510** Service Manual?

Unit	*Excellent*	*Good*	*Fair*	*Bad*
1. Precautions And Safety Notices				
2. Specification				
3. Front Panel Function Control Description				
4. Circuit Description				
5. Adjusting Procedure				
6. Trouble Shooting Flow Chart				
7. Recommended Spare Parts List				
8. Exploded Diagram and Spare Parts List				
9. Block Diagram				
10. Schematic Diagrams				
11. PCB Layout Diagrams				

B.Are you satisfied with the **VX510** service manual?

Item	*Excellent*	*Good*	*Fair*	*Bad*
1. Service Manual Content				
2. Service Manual Layout				
3. The form and listing				

C.Do you have any other opinion or suggestion about this service manual?

Reader's basic data:

Name:		Title:	
Company:			
Add.:			
Tel:		Fax:	
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After completing this form, please return it to ViewSonic Quality Assurance in the USA at facsimile 1-909-839-7943. You may also e-mail any suggestions to the Director, Quality Systems & Processes (marc.maupin@viewsonic.com)